



University Hospitals Birmingham
NHS Foundation Trust



Kick Start – session two

Diabetes Weight Management Group

Building healthier lives

UHB is a no smoking Trust

This patient information leaflet provides the following information covered in Kick Start session two:

- Your diabetes medication and how it works
- How food affects your diabetes control
- Food groups and getting the balance right
- Calorie-controlled diets for weight loss
- Review of your weight management plan and three day food/blood glucose diary

Diabetes medication

Many different types of diabetes medications are available and these can be prescribed on their own or in combination, as each medication works in a different way to lower blood glucose levels. If you require medication, you may find it changes over time.

Below is a summary of the diabetes medications discussed in Kick Start session two.

Metformin

Metformin is usually the first treatment.

How it works: It stops the liver releasing stored sugar (glucose), reduces the amount of sugar absorbed from the food you eat and helps the body's insulin work better. It can help with weight loss.

When to take it: Two or three times a day, with a meal. It is taken in tablet form (up to three times a day). It can also be taken as a liquid.

Sulphonylureas

Examples are gliclazide, glimeperide and glibenclamide.

How they work: They stimulate the cells in the pancreas to make more insulin. The main side effect is low blood sugar levels (hypoglycaemia).

When to take them: Tablets taken once or twice a day with, or just before, meals.

Pioglitazone

How it works: It helps overcome insulin resistance so that you use your natural insulin better. It also helps to protect the cells in the pancreas, so that you're able to produce insulin for a longer period of time.

When to take it: Tablets taken once or twice a day, with or without food.

Incretin mimetics (GLP-1 analogues)

This is not insulin but is given by injection. Examples include Byetta, Bydureon (exenatide), Trulicity (dulaglutide), Luxumia (lixisenatide), Liraglutide (Victoza) and Ozempic (Semaglutide).

How they work: They increase levels of hormones called incretins, which help your body make more insulin as it is needed, reduce the amount of sugar (glucose) made by the liver when it is not needed, and reduce the speed at which you digest food. They also reduce appetite.

When to take them: Injection taken once-daily, twice-daily or once-weekly – it depends on the type.

DPP-4 inhibitors (gliptins)

Examples include sitagliptin, saxagliptin, alogliptin, linagliptin and vildagliptin.

How they work: They stop the enzyme DPP-4 from destroying incretins. Incretins help the body make more insulin when it is needed and bring down the levels of sugar (glucose) made by the liver when it is not needed.

When to take them: Tablets taken once or twice a day, with or without food – it depends on the type. DPP-4 inhibitors can be taken in combination with other Diabetes medications.

SGLT2 inhibitors

Examples include: dapagliflozin, canagliflozin, empagliflozin, ertugliflozin.

How they work: Excess glucose is passed out in your urine, meaning there is less glucose in your blood.

When to take them: Tablets taken once a day, with or without food. Your urine will test positive for sugar (because of the way they work).

Some patients may be on other diabetes drugs. If your drug is not mentioned above, you can ask your diabetes nurse for more information.

Insulin

There are many different types of insulin. If you require insulin, you and your diabetes team will discuss which is most appropriate for you. When you attend the Kick Start weight management group sessions, your diabetes nurse will be able to adjust your insulin doses as needed.

Long acting/basal insulin

These may be given once or twice daily alongside an oral medication or quick-acting insulin. They work best if taken at a regular time and do not need to be taken with food. Examples include Lantus and Levemir.

Ultra long acting insulin

Tresiba 100 (Degludec)

Intermediate insulin

These are similar to long-acting insulin, examples include Insulatard and Humulin I.

High strength insulins

Tresiba 200 (Degludec), Toujeo 300 (Glargine), Humalog 200, Humulin R U500

Quick acting/bolus insulin

These are used alongside intermediate **or** long-acting insulin and must be taken at mealtimes/with carbohydrate. Examples include Novorapid, Humalog, Apidra, Fiasp and Trurapi.

Pre-mixed insulin

These are commonly given two or three times daily. They contain a mix of insulin and work best for those who follow a regular meal pattern/ lifestyle (i.e breakfast, lunch and evening meal). Examples include Humalog Mix 25, Humalog Mix 50 and Novomix 30.

Fig 1; Intermediate acting insulin

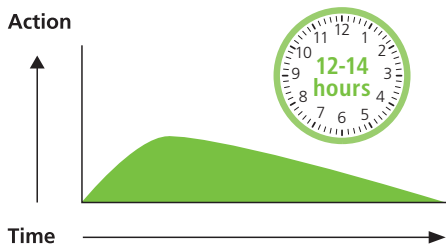


Fig 2; Long-acting insulin

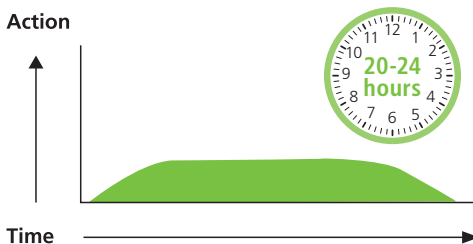


Fig 3; Quick-acting insulin

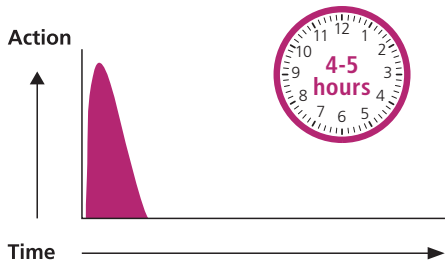
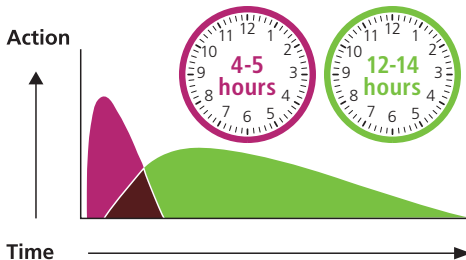


Fig 4; Pre-mixed insulin



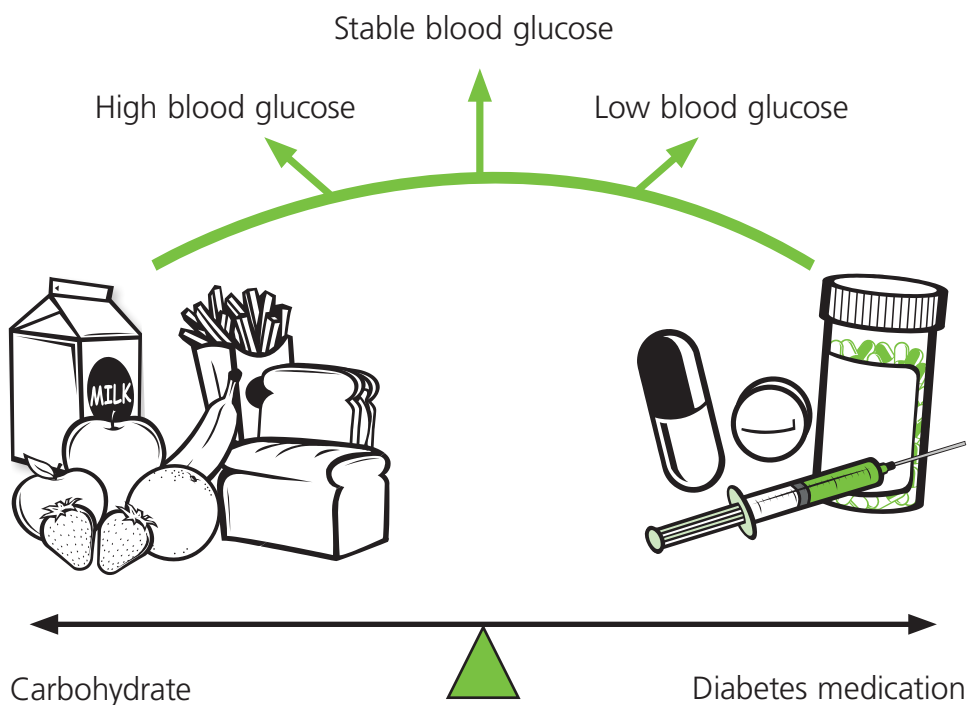
Carbohydrate and diabetes

Foods that contain starch and sugar are collectively called carbohydrates. When digested, these foods are broken down to glucose and absorbed into the bloodstream.

Carbohydrates are important as they provide our bodies with energy

needed to function. For people with diabetes, eating large amounts of these foods will increase blood glucose levels because there is not enough insulin working in their body.

Even with medication, eating large amounts of carbohydrate will affect blood glucose levels. Having smaller portions of carbohydrate at each meal and keeping your portions to approximately the same size will help control blood glucose levels.



What can I do to help my blood glucose levels?

Whilst there is no 'special diet' to follow, there are a number of small changes you can make. These are changes to the timing, amount and type of carbohydrate you choose to eat.

Timing – spread carbohydrate throughout the day

Eating regular meals spreads the carbohydrate load across the day. This reduces the amount of glucose released into your blood at one time.

Amount – eat regular, consistent portions of carbohydrate at mealtimes

All carbohydrate foods are digested and absorbed into the blood as glucose – the more you eat, the greater the effect on your blood glucose level.

For example, you might normally have one slice of toast at breakfast but today you feel hungry so you have a bowl of cereal and two slices of toast. Today, your blood glucose level will be higher because you have eaten more carbohydrate.

Eating similar portion sizes of carbohydrate at each mealtime helps to keep your blood glucose level more stable and helps your diabetes team to prescribe the correct dose of medication.

Do not be tempted to cut out carbohydrate completely, some tablets e.g. Gliclazide require you to have carbohydrate at mealtimes to minimise the risk of you having a low blood glucose level (hypoglycaemia or 'hypo').

Type – choose carbohydrate foods that are broken down slowly

When you feel that you are eating the correct amount of carbohydrate, you may wish to look at the type. Different types of carbohydrate are digested at different speeds and so changes how quickly they may affect your blood glucose level; this is also called the Glycaemic Index (GI).

Lower GI foods are slower to raise blood glucose levels which allows your body to handle the glucose more efficiently. They are also often higher in essential nutrients such as fibre, vitamins and minerals.

1. Starchy CHO	2. CHO as fructose	3. CHO as lactose	4. CHO in snacks
<p>These foods often form the basis of meals, for example:</p> <p>Wholegrain cereals (All Bran, coarse porridge) Potatoes/sweet potato, Granary/seeded/rye breads Wholegrain pasta Basmati rice</p> <p>These are an important part of a balanced, varied diet as they provide 'slow release' energy, fibre, vitamins and minerals.</p>	<p>Whether dried or fresh, fruit contains natural sugar, for example:</p> <p>Apples Oranges Raisins Strawberries Mangos</p> <p>These are an important part of a balanced, varied diet as they provide essential fibre, vitamins and minerals.</p>	<p>Liquid dairy products contain milk sugar (lactose), for example:</p> <p>Milk Yoghurts Ice cream Crème fraiche Fromage frais</p> <p>These are an important part of a balanced, varied diet as they provide essential vitamins and minerals.</p>	<p>These products often have large amounts of added sugar and fat, for example:</p> <p>Sugar Honey Sugary drinks Sweets Fruit juices Crisps Biscuits Chocolate</p> <p>If eaten regularly they may cause weight gain/erratic blood glucose control – avoid these foods where possible.</p>

Fat and diabetes

Having diabetes is a risk factor for heart disease and other conditions and being overweight increases your risk further. Eating as little fat as possible and choosing 'healthier' fats will help with weight control and reduce your risk of complications.

Saturated fat (Such as butter, lard, fat on meat and in cakes and pastries)	Polyunsaturated fat (Such as plant-based oils and spreads)	Monounsaturated fat (Such as olive and rapeseed oils and spreads)	Omega-3 (Such as salmon, trout and fresh tuna)
<ul style="list-style-type: none"> ✗ High energy ✗ Too much can cause weight gain ✗ Can increase cholesterol levels ✗ More than 5g per 100g is HIGH ✓ Swap to other fats where possible ✓ Choose reduced fat options ✓ Limit these foods to treats eaten occasionally ✓ Do not add any extra fat ✓ Less than 1.5g per 100g is LOW 	<ul style="list-style-type: none"> ✗ High energy ✗ Too much can cause weight gain ✓ Swap to monounsaturated fat where possible ✓ Choose reduced fat options ✓ Do not add any extra fat 	<ul style="list-style-type: none"> ✗ High energy ✗ Too much can cause weight gain ✓ Choose reduced fat options e.g. olive oil based spread ✓ Do not add any extra fat ✓ Use rapeseed/ground nut oil for cooking and olive oil for dressings 	<ul style="list-style-type: none"> ✓ Choose oily fish ✓ Vegetarian sources include linseed/flaxseed

Protein and diabetes

Meat, poultry and eggs	Fish	Milk and dairy	Beans pulses, nuts and seeds
<p>✓ Good source of iron</p> <p>Suggestions:</p> <ul style="list-style-type: none"> • Choose lean cuts of meat • Keep portion sizes to 2–3oz (50–75g) • Trim off excess fat • Remove skin from poultry • Avoid adding fat – grill/steam/poach/boil instead • Limit eggs to one per day 	<p>✓ Oily fish contain omega-3; important for heart health</p> <p>✓ White fish is lower in fat</p> <p>Suggestions:</p> <ul style="list-style-type: none"> • Aim for two portions a week – include one portion of oily fish <p>Oily fish include mackerel, sardines, salmon, trout, and fresh tuna</p>	<p>✓ Good source of calcium</p> <p>Suggestions:</p> <ul style="list-style-type: none"> • Choose low fat varieties • Milk and other ‘liquid’ dairy will contain carbohydrates too and will affect your blood glucose level 	<p>✓ Good vegetarian source of protein</p> <p>✓ Contains monosaturated fat; better for heart health</p> <p>✓ Good source of fibre</p> <p>Suggestions:</p> <ul style="list-style-type: none"> ✗ Avoid varieties with added salt • Some beans and pulses will contain carbohydrate but normally will not affect your blood glucose level • Be aware that the sauces that these foods often come in may contain sugar and will affect your blood glucose level

A calorie-controlled diet for weight loss

A calorie-controlled diet is where you change your intake of food and drink (calories) in a sensible way to achieve weight loss. Evidence recommends following a diet that contains 600 calories less than what is needed to maintain your weight. If you consume 600 calories less per day, you should lose weight at a safe rate of 0.5–1kg (1–2lbs) per week. This is a sensible and achievable weight loss target that is more likely to help with weight loss in the long-term. For most men, this will mean consuming 1800–1900kcal a day, and for most women, 1400kcal–1500kcal a day. Your dietitian will provide further information on this during session two.

Useful tips to reduce your total calorie intake:

- Try using a smaller plate to help reduce portion size
- Half fill your plate with vegetables/salad and divide the other half between protein foods (meat, fish, egg or beans) and starchy carbohydrate foods (potatoes, rice, pasta or bread)



Remember:

- Losing weight takes time
- Small changes can make a big difference in the long-term
- Completing the three day blood glucose and food diary provided by your diabetes nurse/dietitian will help determine what changes are required

Diabetes centre contact numbers:

Tel: 0121 371 4523

Tel: 0121 371 4535

Useful links

www.nhs.uk/better-health

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If you require this information in another format, such as a different language, large print, braille or audio version please ask a member of staff or email **patientexperience@uhb.nhs.uk**.

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