Papworth Hospital NHS
NHS Foundation Trust

Diet, diabetes and cystic fibrosis

A patient's guide

About this guide

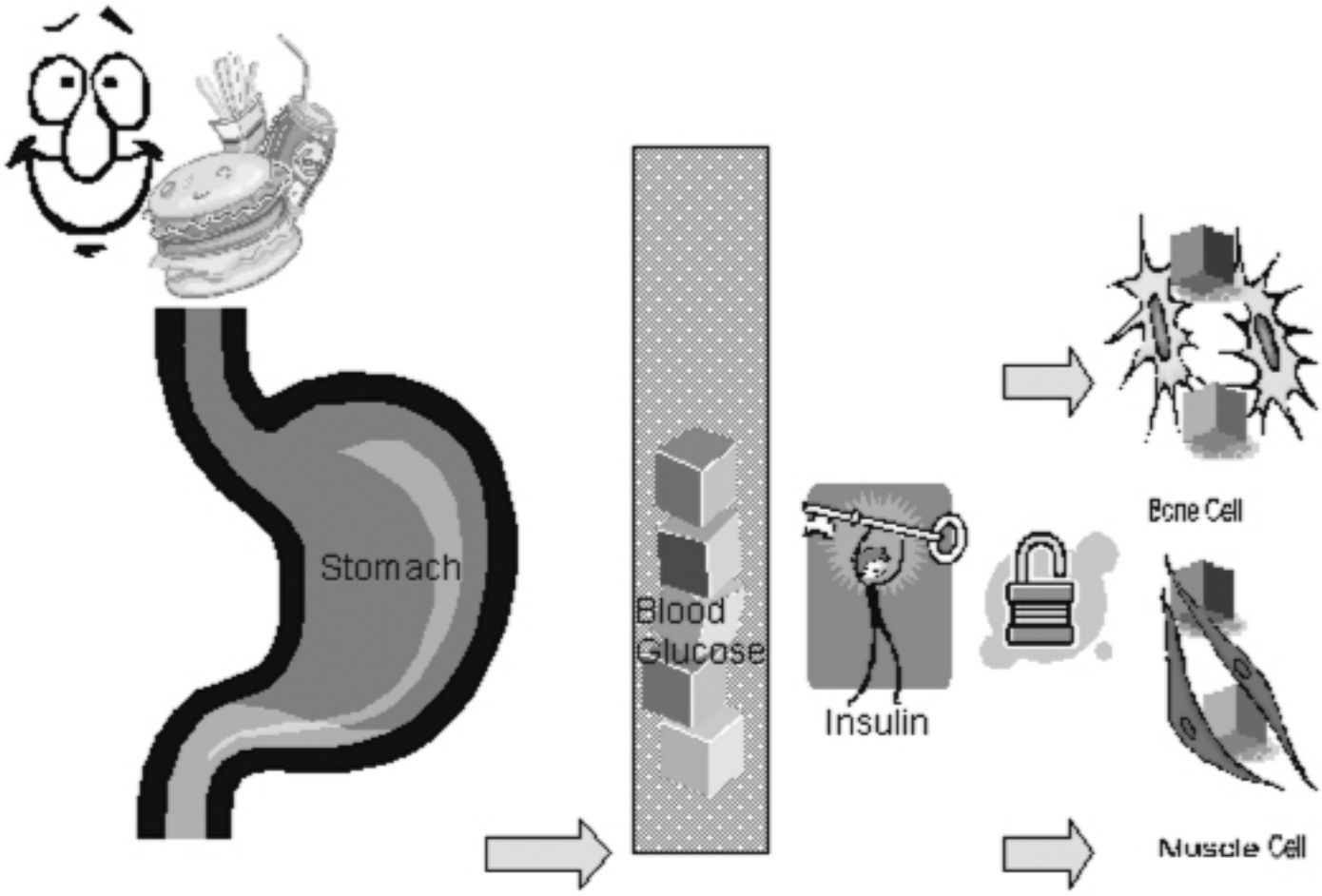
This guide is designed to be used in conjunction with individual advice from your CF team. Your dietitian or diabetes nurse will go through the information in this guide with you.

What is diabetes?

Cystic Fibrosis Related Diabetes Mellitus (CFRDM) is a condition that some patients with cystic fibrosis develop. This is caused by changes in the pancreas which leads to alterations in insulin production. Insulin is a hormone that controls blood sugar (glucose) levels and allows us to use the energy from the food we eat. Glucose enters your bloodstream following digestion of starchy food (e.g. bread, potatoes, cereals etc) and sugars (sweets, fizzy drinks etc). In diabetes the lack of insulin causes the sugar level to rise too high. Symptoms of high sugar levels may include increased thirst, tiredness, passing lots of urine, blurred vision and weight loss.

If you do not have sufficient insulin then your blood sugar levels may continue to rise, your body will have to break down its stores of muscle and fat to provide you with energy and you may lose weight and feel unwell.

> Remember
> CF related diabetes occurs when the body cannot produce the right amount of insulin at the right time to control blood sugars effectively



When you eat your food is digested and turned into blood sugar. Blood sugar can then be moved to your muscles and organs to provide you with energy by the action of insulin.

What can cause CFRD?

Sometimes blood sugar levels may be raised during chest infections or a course of steroids or when using nasogastric or gastrostomy feeds. In these situations medication (insulin or tablets) may be needed temporarily. Sometimes diabetes is permanent and will always need treatment with medication.

How is CFRD diagnosed?

Routine blood tests in clinic or on the ward can detect abnormal blood glucose levels. You will also have an oral glucose tolerance test at annual review which will show how your body deals with glucose. If you have symptoms such as thirst, tiredness, passing lots of urine and weight loss this may indicate the need for blood glucose level testing.

How can I control my CFRD?

CFRD is usually treated with insulin. Insulin cannot be given by mouth because the enzymes in the stomach would stop it working, so it needs to be given as a small injection under the skin. Some people with diabetes will need to start taking insulin straight away others may start on tablets but will eventually need insulin. Your CF team will help you decide the best treatment for you.

There are benefits to taking insulin, it can improve your appetite which will help with weight gain, and because your blood sugar levels will be better controlled you may find that you feel better overall and your chest improves.

Diet and CFRDM

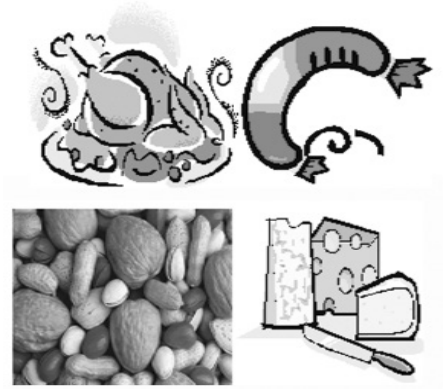
If someone without CF is diagnosed with diabetes they are usually recommended to follow a diet low in fat and sugar to help control their blood sugars and prevent weight gain. However because more energy is needed in the diet of people with CF there will usually only need to be minor changes to your diet. We may ask you to reduce the amount of sugary drinks and foods taken such as Lucozade, energy drinks and large amounts of sweets. You will be advised individually regarding your diet.

Food is divided into three main groups:

1. Carbohydrate
2. Protein
3. Fat

The table overleaf gives examples of these food groups.

> Remember
> Being diagnosed with diabetes will not mean lots of dietary restrictions

Food group	Examples	Effects on blood sugars	* Do I count carbohydrate?
Carbohydrate starches Bread Potatoes Pasta Rice Breakfast cereals Croissants Chapatti Poppadoms Naan bread		Increase slowly 	Yes
Carbohydrate sugars Fizzy drinks Lucozade Sugar Honey Jam Cake Biscuits		Increase quickly 	Yes
Proteins Meat Fish Cheese Eggs Nuts Tofu Soya Quorn Pulses e.g. lentils Peanut butter		No effect 	No
Fats Butter Mayonnaise Oil Cheese Lard Cream		No effect 	No

Food group	Examples	Effects on blood sugars	* Do I count carbohydrate?
Vegetables Carrots Peas Aubergines Courgette Cauliflower Beans Sweetcorn Cabbage		Increase slowly Sometimes increase in blood sugars with large amounts starchy vegetables	Startchy vegetables such as sweetcorn and peas
Dairy Yoghurt Milk		Increase slowly ↑	Yes
Fruit Apple Orange Strawberries Mangos Grapes Plums Pineapple Raspberries Blueberries		Increase slowly ↑	Yes

Remember
It is important to try and have lots of variety in your diet and include some fruit and vegetables daily

* Do I count carbohydrate? This section will be explained later in the guide.

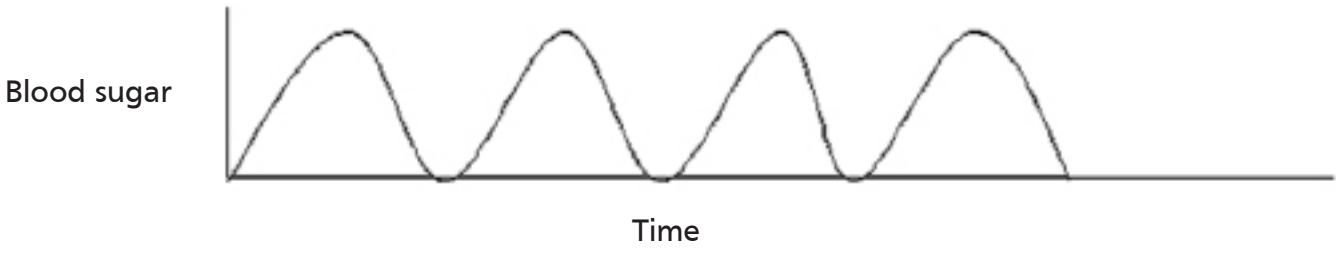
The Influence of food intake on blood sugars in diabetes

Large meals and snacks will give large peaks in blood sugar levels that need to be controlled with insulin or tablets. It is important that you do not restrict your dietary intake to try and control your blood sugars as you will not be able to eat sufficient energy.

Having very sugary drinks such as Lucozade or energy drinks will give large, rapid rises in blood sugar which cannot be controlled adequately with insulin or tablets and we therefore recommend that you avoid these and very sugary foods and drink. You can have some other sugary drinks such as pop and squash but it is best to have these with a meal or snack which will reduce peaks in blood sugar. The team will work with you to match your meals and snacks with insulin or tablets.

Remember
The team will work with you to match your diabetes tablets or insulin to your diet

Larger meals and snacks give larger peaks in blood sugar



Smaller meals and snacks will give smaller peaks in blood sugar

Why is it important to keep my blood sugar levels within the normal range?

Try to keep blood sugars between 4-7 mmol/L. Initially the aim is to keep them below 10 most of the time. There are lots of reasons why it is important to keep your blood sugars under control:

- It may take longer to get over a chest infection if your blood sugars run too high.
- Even though you may not feel unwell with raised blood sugars it is not good for you.
- If you have poor blood sugar control, it can be damaging over the longer-term to many body areas including your eyes, kidneys and feet.
- It will help control the symptoms of thirst, dehydration and passing lots of urine.
- It will also help to prevent you losing weight and may help you to gain weight if that is required.

Testing blood sugars

You will need to test your blood sugar levels so that the effectiveness of your diabetes medication can be monitored and you can ensure that your blood sugars are not running to low or too high. Symptoms of high blood sugars and low blood sugars can be similar. Usually you will need to check blood sugars pre-meal and at bedtime, but this can vary from person to person.

You will need to check your blood sugars more frequently when you are unwell, before and after exercise and if you feel as if you are having a hypo. Hypos are discussed opposite.

> Remember
> Record your blood sugars levels in your blood test book, note any problems or comments and remember to bring it to clinic with you.

Hypoglycaemia

Hypoglycaemia (hypos) are blood sugars lower than they should be. A hypo is when blood sugar is below 4mmol/L.

S*ymptoms may include:*

- Confusion
- Weakness
- Sweating
- Hunger
- Dizziness
- Tingling

Your blood sugar levels may become too low if you:

- Miss a meal or snack
- Have insufficient carbohydrate
- Take more insulin or diabetes tablets than you need
- Take unaccustomed or strenuous exercise
- Drink too much alcohol or drink alcohol on an empty stomach

> Remember
> Prevent hypos by eating and taking your insulin at the correct time. Ensure that your family and close friends know how to treat a hypo if necessary.

How do I treat a hypo?

Check you blood sugar levels. *If your blood sugar levels is below 4 mmol/L:*

1. Have some quick acting carbohydrate such as four glucose tablets or 100ml Lucozade, 100ml of Coke or five jelly babies.
2. It is important to follow this up with some longer lasting carbohydrate such as a sandwich, toast or biscuits.
3. Recheck your blood sugar levels after 30 minutes to ensure that they are back within the normal range.
4. if they are not above 5 mmol/L then re-treat.

Don't be tempted to over treat a hypo as this will mean your blood sugars will rise too high.

If you have foods which release sugar slowly initially (such as chocolate) then your blood sugar levels may not increase quickly enough.

Severe hypos

Rarely, patients may have a severe hypo when they lose consciousness. In this case they should be put on their side and an ambulance called. Do not force anything into their mouth or they may choke.

Driving

- If you are on diabetes medication, it is the law to test your blood sugar levels before driving.
- You must always have suitable hypo treatment in the car, i.e. fast acting and longer acting CHO.
- If you do experience a hypo whilst driving you must stop as soon as you can, turn off the engine, remove the keys, move to the passenger seat and then treat the hypo.

Alcohol

- It is recommended that you have no more than two to three drinks throughout an evening*. Try to have these with or after a meal and not on an empty stomach
- Always check with your doctor if it is safe for you to drink alcohol.
- Be aware that drinking alcohol can lower your blood sugar levels and cause a hypo, sometimes this can be several hours after your last alcoholic drink.
- You will not usually need to take additional insulin with alcohol.
- Ensure that you snack regularly and check your blood sugars regularly.

**Single measures*

Illness

- Check your blood sugars regularly and record them in your blood sugar monitoring book.
- You may find that your blood sugars are higher than normal when you are ill, you may require more tablets or insulin so it is important to speak to your diabetes nurse or doctor.
- Don't stop your insulin even if you have a poor appetite, try to have something to eat or drink every two to three hours e.g. juice, milk, milkshake, fizzy drink, yogurt, ice-cream, jelly. Ensure that you drink lots of fluids to avoid dehydration.

Exercise

- Exercise will lower your blood sugars and you will use up more carbohydrate than usual. It is important to check your blood sugars before starting exercise and you may need to take extra carbohydrate before you start.
- If you are doing prolonged exercise you will need to have some extra long acting carbohydrate such as toast, sandwich, malt loaf, fruit, biscuits before hand and every couple of hours.
- For shorter more intense exercise you will need some fast acting carbohydrate such as sugary drink and then some slower acting carbohydrate.
- It is important to discuss exercise with your doctor, physiotherapist and dietitian to get individualised advice.

Carbohydrate counting list

The carbohydrate that you eat, your activity and your insulin affect your blood sugar. By trying to match the carbohydrate you eat to the insulin you take it is possible to improve your blood glucose control. The best way to do this is to learn how much carbohydrate there is in the food you eat. The list on the opposite page will help you to work out the carbohydrate value of foods, the values in this list have been rounded up or down to the nearest 5 or 10g of carbohydrate to simplify the calculation. One cup in this list refers to a standard metric 200ml cup and is used to speed up estimation.

Other useful resources for carbohydrate counting are the food and calorie counters available from all good book stores. *Examples are:*

1. Collins Gem Calorie counter
   ISBN: 0004589521

2. Food and Diet Counter - we recommend that you visit www.carbsandcals.com, which has links to pictures of food and their carbohydrate content

The internet is also a good place to look for the up-to-date carbohydrate contents of takeaway/restaurant foods:

- www.pizzahut.co.uk
- www.dominos.co.uk
- www.pizzaexpress.co.uk
- www.kfc.co.uk
- www.nandos.co.uk
- www.burgerking.co.uk
- www.mcdonalds.co.uk

Please ensure you are looking at nutritional information relating to the UK and not elsewhere in the world as the composition of food and standard portion sizes can be different from country to country.

For general advice:

- www.cftrust.org.uk
- www.diabetes.org.uk - a good resource for general diabetes information, but remember that CFRDM is treated differently to Type I or Type II diabetes.

Conversion chart

Weights and measures

Imperial	Metric
½ oz	15g
1oz (1oz equal to 28.3g - therefore figures have been rounded up or down as needed)	30g
2oz	55g
3oz	85g
4oz	110g
5oz	140g
6oz	170g
7oz	195g
8oz(½ lb)	225g
12oz (¾ lb)	335g
16ox (1lb)	455g
1 teaspoon	5ml
1 tablespoon	15ml
5 fl oz (¼ pint)	150ml
10 fl oz (½ pint)	300ml
15 fl oz (¾ pint)	450ml
20 fl oz (1 pint)	600ml

1 cup = 200 ml standard metric cup

All amounts are approximate. Please check labels for more accurate carbohydrate contents.

Food group	Amount	Carbohydrate (g)
Cereals		
All Bran	65g, approx 1 cup	30
Branflake	40g, approx 1 cup	30
Cheerios	25g, approx 1 cup	20
Coco Pops	40g, approx 1 cup	35
Cornflakes	30g, approx 1 cup	25
Country Crisp	100g, approx 1 cup	65
Frosties	30g, approx 1 cup	30
Frosted Shreddies	60g, approx 1 cup	50
Fruit & Fibre	55g, approx 1 cup	40
Muesli	110g, approx 1 cup	70
Porridge made with milk	200g, average serving	30
Porridge made with water	200g, approx 1 cup	20
Shredded Wheat	1 biscuit	15
Weetabix	1 biscuit	10
Rice Krispies	30g, 7 tablespoons	25
Porridge Oats	50g, approx ½ cup	30
Bread		
Bagel		40
Bread	100g	50
Sliced bread	1 thin	10
Sliced bread	1 medium	15
Sliced bread	1 thick	20
Bread roll/bun	Medium	20
Bread roll/bun	Large	30
Chapatti	Medium	30
Ciabatta	5cm piece	20
Croissant	1	20
Crumpet	1	20
Currant bread	1 slice	15
English muffin, bread based		30
Focaccia	Whole	120
Finger roll		15
French stick	2 inch slice	20
Naan bread	Small	40
Pitta bread		30
Pumpernickel	1 slice	20
Rye bread	1 slice	10
Scotch pancake	1	15
Stottie/barn cake	7 inch	110
Waffle	45g	15

Food group	Amount	Carbohydrate (g)
Potatoes		
Raw potato	100g	15
Jacket potato cooked with skin	Small, 100g	30
Jacket potato cooked with skin	Medium, 180g	55
Jacket potato cooked with skin	Large, 330g	100
Roast potato	1 small, 40g	10
Roast potato	100g	25
Boiled potato	100g	15
Boiled potato	60g, 1 egg size	10
Fries	10 thin cut, 25g	10
Chips	100g	30
Chips	4 medium cut, 25g	10
Crisps/savoury snacks	1 individual bag	10 to 30
Croquette	2 ready prepared	10
French fries	Regular from takeaway	35
Mashed potato	100g	15
Mashed potato	1 scoop or tablespoon	10
Micro chips	1 box	30
Plantain	200g, 1 finger	60
Popcorn, savoury	100g	50
Potato waffle	1 frozen	10
Potato wedges	2 large	10
Yam, raw	100g	30
Rice cakes	3	20
Sweet potato	130g	27
Pasta and rice		
Cannelloni	2 tubes uncooked	10
Couscous	100g uncooked	70
Macaroni cheese	200g small tin	25
Noodles	1 serving, 100g dry weight	70
Pasta, cooked	100g, approx 1 cup	20
Pasta, uncooked	100g	70
Pot noodle/rice per pot	40-50	40-50
Ravioli, tinned	200g small tin	30
Lasagne sheet uncooked		10
Ready made lasagne	1 portion	40
Rice, cooked	100g, approx 1 ½ cups	30
Rice, uncooked	100g	80
Rice, uncooked	75g, approx 1/3 cup	60
Spaghetti, tinned	200g, small tin	30
Filled tortellini, fresh	½ packet	75

Food group	Amount	Carbohydrate (g)
Pies/pastries/pizza		
Cornish pasty		40-50
Findus crispy pancake		15
Pizza 12"	Large thin	120
Pizza 12"	Large thick	160
Pizza 9"	Medium thin	70
Pizza 9"	Medium thick	100
Pizza 7"	Small thin	50
Pizza 7"	Small thick	80
Pork pie	Small/individual	20
Quiche	100g (¼ of 12" base)	20
Spring roll		10
Sausage roll party size	Party size 2	10
Sausage roll medium	Medium 6"	30
Steak & kidney pie	Individual	40
Main meal accompaniments		
Dumpling	1 small	20
Garlic bread	9" baguette	90
Tortilla	7"	20
Yorkshire pudding	Small	10
Yorkshire pudding	Giant	30
Baked beans	1 small tin	10
Soups and sauces		
Clear soup	Medium tin	10
Vegetable soup	Medium tin	20
Pasta/potato	Medium tin	30
Packet cup a soup		5
Sweet & sour sauce	Jar/tin	60-90
Biscuits/crackers/savoury		
Bourbon	1	1 10
Cereal bar - Harvest/Tracker/ Frusli/Jordan	1	15-20
Chocolate coated digestive	1	15
Cream crackers	2	10
Crisp bread e.g. Ryvita	2	10
Custard cream	1	10
Digestive/Hobnob	1	10
Fig roll	1	10
Flapjack	90g	50

Food group	Amount	Carbohydrate (g)
Biscuits/crackers/savoury - cont		
Ginger snap	1	10
Jaffa cakes	1	10
Kit Kat	2 fingers	15
Malted milk	2	10
Nutrigrain	1	30
Oatcakes	2	15
Penguin	1	15
Rich tea	2	10
Ritz	2	10
Shortbread	1	10
Snowball	1	10
Tuc sandwich	2	10
Tuc plain	3	10
Wagon Wheel	1	20
Wafer biscuits	2 large	10
Wafer biscuits	4 small	10
Cakes		
Mr Kipling cake slice		20
Chelsea bun		40
Currant bun		30
Danish pastries	90g individual	40-50
Doughnut - jam filled	75g	40
Eccles cake	Individual	30
Frozen chocolate éclair	60g	20
Fruit cake	60g individual wrap	35
Fruit pie	Individual	30
Jam tart	Individual	20
Madeira cake	Thin slice	20
Malt loaf 15	Medium slice, 25g	15
Mini chocolate roll		15
Muffin	Sweet	40
Scone		30
Scotch pancake	1	15
Swiss roll	1 slice	20
Teacake	Small	20
Teacake	Large	30
Vanilla slice		30

Food group	Amount	Carbohydrate (g)
Puddings		
Angel Delight	¼ packet with milk	15
Cheese cake	Slice	40
Christmas pudding	Individual	50
Crepes (plain)	Plate size x 2	15
Crunch corner yogurt		30
Custard	¼ pint	20
Lemon meringue pie	80g	30
Meringue nest	Individual	15
Milk pudding	Small tin 300g	30
Jelly, not sugar free	Small serving	10
Potted dessert - trifle, mousse		20
Tinned sponge pudding	½ tin	70
Treacle tart	1/6th	50
Ice cream		
Arctic roll slice		10
Choc ice		10
Cornetto		20
Feast		20
Fruit lolly		10
Ice cream/sorbet	1 scoop	10
Ice creams - Solero		20
Magnum		30
Mars bar		30
Mivi strawberry		20
Vienetta slice		10
Home baking		
Cornflour/custard powder	25g	25
Dried fruit	25g	20
Semolina	25g	20
Flour	25g	20
Flour	100g	70
Glace cherries	1 (25g)	1 (25g) 20
Oats	25g	20
Sugar	25g	25
Sugar	1 teaspoon	5
Syrup/honey	25g	20

Food group	Amount	Carbohydrate (g)
Fruit		
Apple	1 average size 100g	10
Apricots	3 dried	10
Banana		20
Banana with skin	100g	25
Fruit cocktail tinned in juice	100g	10
Grapes	100g	15
Grapes	65g, small bunch	10
Juice fresh fruit	100ml	10
Kiwi fruit		10
Mango	100g	15
Melon	100g	15
Nectarine or peach, fresh or tinned in juice	100g	10
Orange	Average	10
Orange weighed with skin	Orange weighed with skin 100g	5
Pear, fresh or tinned in juice	100g	10
Pineapple	1 slice	10
Plums	4	10
Plums	100g	10
Sultanas/raisins	25g, 2 dessert spoons	20
Sultanas/raisins	100g	40
Strawberries	10	10
Strawberries	100g	5
Satsuma	3 medium	20
Milk and dairy		
Milk shake, ready made	500ml	50
Milk, all types	1 glass, 200ml, 1/3 pint	10
Yoghurt, low fat fruit	150g	20
Yoghurt, low fat natural	150g	10
Yoghurt, low sugar fruit	150g	10
Preserves		
Chocolate spread	20g, 1 heaped teaspoon	10
Honey	15g, 1 rounded teaspoon	10
Jam/marmalade	15g, 1 rounded teaspoon	10
Mango chutney	20g, 1 heaped teaspoon	10
Sugar	5g, 1 level teaspoon	5

Food group	Amount	Carbohydrate (g)
Sweets and chocolate		
Bounty	57g bar	30
Chocolate bar	50g	30
Crunchie	38g	30
Individual chocolates e.g. Celebrations, Quality Street		5
Fruit Pastilles	52g, 1 packet	45
Lockets	1 tube	40
M & M's	Standard packet	30
Maltesers	Standard packet	25
Mars Bar	Standard 62.5g	40
Mars Bar	Kingsize	60
Mars Bar	Mini (funsize)	10
Mars Bar	Snack size, 42g	30
Minstrels	Standard packet	30
Mints	1 tube	30
Mixed sweets	30g	25
Starburst	1 tube, 45g	40
Pick & Mix	100g	90
Snickers	64.5g, standard size	35
Tunes	1 tube	35
Twix	Standard size	40
Wispa	38g, standard size	20
Soft drinks and juice		
Apple juice	100ml	10
Coke (non-diet)	200ml	20
Drinking chocolate	1 mug with milk	20
Fruit juice	200ml	20
Instant chocolate drink	1 sachet made with water	20
Instant chocolate drink	Low calorie, 1 sachet made with water	5
Lemonade	300ml	20
Lucozade original	120ml	20
Malted milk	1 mug with milk	30
Orange juice, unsweetened	100ml	10
Hypo treatment		
Coke	200ml	20
Dextrose tablets	5	20
Fruit juice	200ml	20
Lemonade	300ml	20
Lucozade original	120ml	20

Food group	Amount	Carbohydrate (g)
Takeaways		
Chinese		
Plain boiled rice	Standard foil tray	90
Fried rice	Standard foil tray	80
Chow mein	Standard foil tray	60-80
Indian		
Rice		70-80
Poppadoms	3	3 10
Samosa	Large	20
Bhaji	Large	10
Chapatti	Small	15
Chapatti	Medium	25
Chapatti	Large	50
Naan bread		90
Indian meals		
Chicken vindaloo	350g	10
Chicken tandoori	100g	2
Chicken korma	350g	20
Lamb biryani	400g	80
Vegetable bhaji	300g	30
Potato bhaji	250g	40
Vegetable curry	200g	20
Beef curry	350g	10
Fish and chips		
Fish in batter		20
Chips	Large portion	80-100
Chips	Small portion	40

Food group	Amount	Carbohydrate (g)
Takeaways/restuarant meals		
Buger King		
Whopper		50
Whopper Junior		30
Double Whopper		50
Cheeseburger		30
Hamburger		30
Big King		30
Angus Burger		40
Ocean Catch		40
Chicken Royale		50
Chicken Tendercrisp		50
Sweet chilli chicken wrap		35
Hash Browns	Regular	25
Chicken Nuggets	6	20
Chicken Nuggets	9	30
Onion rings	Regular x 8	45
BK fries	Regular	40
BK fries	Large	50
Ketchup	1 sachet	5
BBQ sauce dip pot		10
Mini pancakes with maple syrup	Regular	40
KFC		
Chicken fillet burger		45
Zinger burger		50
Chicken fillet tower		60
Zinger tower		65
Toasted Twister		45
Dippin' Strips		35
Popcorn chicken	Regular	15
Corn cobette		15
Fries	Regular	40
Fries	Large	55
Big Daddy Burger		60

Food group	Amount	Carbohydrate (g)
Takeaways/restuarant meals		
McDonalds (www.mcdonalds.co.uk/content/ukhome/meal_builder.html)		
Bacon & egg McMuffin		30
Sausage & egg McMuffin		30
Hash brown		15
Big Tasty		50
Big Mac		40
Cheese burger		30
Quarter pounder with cheese		40
Hamburger		30
Fillet-o-fish		40
Chicken McNuggets	6 nuggets	20
French fries	Small	30
French fries	Medium	40
French fries	Large	60
Sundae, no topping		50
Apple pie		30
Milkshake, chocolate	Large	90
Pizza Hut (restaurant)		
Regular pan 9"	1 slice	20
Stuffed crust - large	1 slice	35
The Italian - regular	1 slice	20
Lasagne	1 portion	50
Garlic bread	1 portion	50
Your additions		

Food Labels

You can also look on food labels to find out the carbohydrate content of the foods you eat. Look at the total carbohydrate content of the food not the sugar content. From the example below you would count 30g carbohydrate per pack eaten. If you ate 400g of pie you would count 40g carbohydrate, as from the left hand column each 100g pie contains 10g carbohydrate so 4 x 10g = 40g carbohydrate

Typical value	Amount per 100g	Amount per pack (1 serving)
Energy	85	254 Kcal
Protein	5.4g	16.1g
Carbohydrate (of which sugars)	10g 1g	30 3g
Fat (total)	11g	33g
of which Saturated	5g	15g
Polyunsaturated	3g	9g
Monounsaturated	3g	9g

Snacks

Foods with less than 10g carbohydrate can be eaten without needing to take additional insulin. Examples of such foods are given below:

- 1 apple
- 1 digestive biscuit
- 2 sausages
- 1 glass of milk
- 1 natural yoghurt
- 1 medium slice of bread (small loaf)
- 1 small banana
- 3 tablespoons of cereal
- 2 semi-sweet biscuits
- I individual packet of crisps

Food and blood sugar diary

Please record everything you eat and drink on this chart, include blood sugar readings, amount and type of insulin taken in the relevant box.

Date	Time	Blood sugar pre-meal	Meal/snack description	Amount carbohydrates (grams)	Insulin type & amount given	Blood sugar 2 hours post meal	Comments

Food and blood sugar diary

Please record everything you eat and drink on this chart, include blood sugar readings, amount and type of insulin taken in the relevant box.

Date	Time	Blood sugar pre-meal	Meal/snack description	Amount carbohydrates (grams)	Insulin type & amount given	Blood sugar 2 hours post meal	Comments

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Department:	Nutrition and Dietetics
Reprinted:	March 2013
Review date:	March 2015
Version:	2
Leaflet number:	PI 90

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