Carbs & Cals

WORLD FOODS

A visual guide to African, Arabic, Caribbean and South Asian foods for diabetes & weight management

by Salma Mehar, Dr Joan St John, Chris Cheyette & Yello Balolia

SUPPORTED BY
DIABETES UK
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Carbs & Cals WORLD FOODS

African, Arabic, Caribbean & South Asian foods

1ST EDITION

First published in Great Britain in 2019 by Chello Publishing Limited

Registered Company Number 7237986

www.chellopublishing.co.uk | info@chellopublishing.co.uk

Special thanks: Alex Silverstein, Alliya Khan, Mrs Amal Almhalhel, Amanda Moore, Ameera Nasrallah, Andrea Pillar, Annemarie Knight, Buchi Reddy, Mr & Mrs Butt, Cathy Allcard, Christine, Joyle & the St John Family, Dr Daniel Darko, Dilani Wanniarachchige, Douglas Twenefour, Earlyn Trumpet, Gaya Madden, Haroon Mehar, Jade Crawford, Justine Rose, Lesley Roberts, Dr Louise Goff, Lucy Ogida, Maddy Ieriti, Maryam Mehar, Melanie Stephenson, Dr Miriam Onyeador, Radhika Howarth, Shahzad Mehar, "The Posse", Tony Dennis, Teshome & Amari Dennis and wives, Dr Tony Willis, Yoshi Balolia, Zeinab Mear-Mosaway, Brent Diabetes, Diabetes UK, Hiddo Restaurant, Mama Calabar Restaurant, NW London STP, Sandayos African Cuisine, South Asian Health Foundation, World Food Study, and Zoe's Catering.

ISBN: 978-1-908261-25-0 Printed in the UK Mar 2020 (version 1.1)

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Foreword

People from African, Caribbean and South Asian communities are at higher risk of type 2 diabetes than those from white backgrounds. Carbohydrate awareness and weight loss are important for managing type 2 diabetes, and carb counting is a key part of type 1 diabetes.

Carbs & Cals World Foods is a great tool for people from ethnic minority backgrounds who have diabetes, helping to manage the condition by estimating the amount of carbs in traditional foods. This easy to use visual guide allows you to compare what is on your plate with the photos in the book, to find out the amount of carbs and calories you are eating. Knowing how many calories are in a portion of food can be helpful to manage your weight, and may let you know that you need to eat a smaller portion or opt for something healthier.

Having all of this information at your fingertips, in an easy to understand format, will help give you greater control over your diabetes and provide the information you need to make healthier choices at meal times. Whatever your goals, we are sure that you will find Carbs & Cals a great help in achieving them.

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Introduction

Thank you for choosing to read **Carbs & Cals WORLD FOODS**.

This book contains 750 photos of a wide range of popular food and drink items from African, Arabic, Caribbean and South Asian communities, as these cultures have a significant representation in the UK.

This resource is primarily aimed at people living with (or at risk of developing) type 2 diabetes, helping them improve their blood glucose levels and lose weight where necessary. It can also be used by anyone who wants to increase their awareness of the carbohydrate, calorie or fat content of these traditional foods.

Carbs & Cals WORLD FOODS is the perfect support tool for carbohydrate awareness, carb counting in diabetes, weight management, portion control and general healthy eating.

Blood Glucose

In this book, special focus is given to the carbohydrate content of foods, as carbs comprise up to 60% of the foods eaten by people from African, Arabic, Caribbean and South Asian communities, and carbohydrate is the food group that tends to have the most impact on blood glucose levels. This book enables you to see, at a glance, the carb content of foods and how portion sizes may impact your blood glucose levels.

When we eat carbs, they are broken down into glucose (sugar) before entering the bloodstream. Glucose is able to enter the cells and provide energy (with the help of insulin, which acts like a key opening the door of the cell to let the glucose in). The more carbs there are in the food, the more glucose enters the bloodstream.

Throughout this book, each 5g of carbs is represented by 
This is a reminder that the carbs in the food portion will have a direct effect on your blood glucose level.

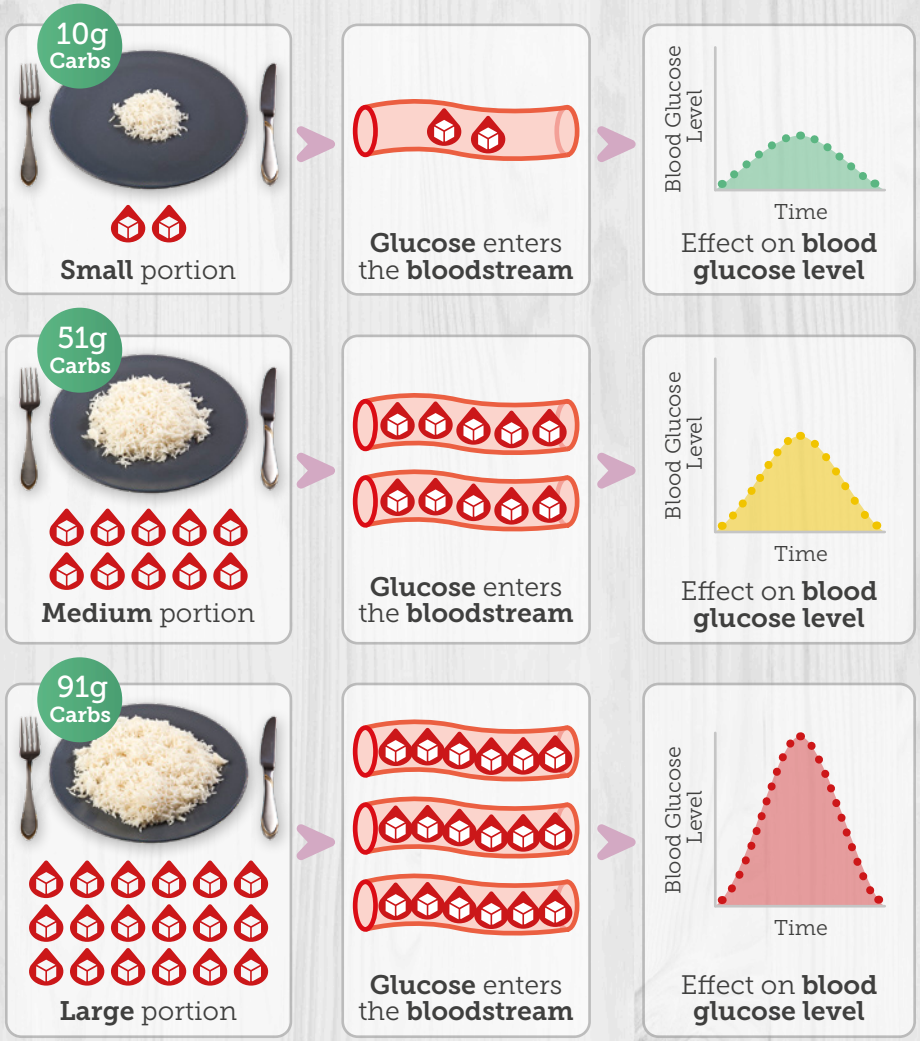
Not all carbs are the same!

As well as the amount of carbs in a food portion, the type of carbs and other nutrients in the food also have an effect on blood glucose levels.
See carbs section on page 22 and GI on page 25 for further info.

Portion size

The amount of carbs is determined not only by the ***type*** of food, but also the ***portion size***. For example, a small portion of rice may contain 10g carbs, which is broken down into glucose in the bloodstream and creates a small rise in your blood glucose level.

However, a large portion of rice may contain 91g carbs. This is broken down into much more glucose in the bloodstream, and results in a significantly higher rise in your blood glucose level.



How to use this book

The **blood glucose icons** are the unique feature of the book. They represent the carbohydrate content of each food portion and its possible effect on your blood glucose level.

If you are living with type 1 or 2 (or are at risk of) diabetes, the key is to use the icons to easily understand how much carbohydrate is in the food you often eat. The blood glucose icons give a quick indication of carb content to help you choose healthy food options and portion sizes. This will boost your confidence in estimating your carb intake.

If you are not living with diabetes, you may find this book useful to increase awareness of your carb, calorie and fat intake, helping you to manage your weight and overall health.

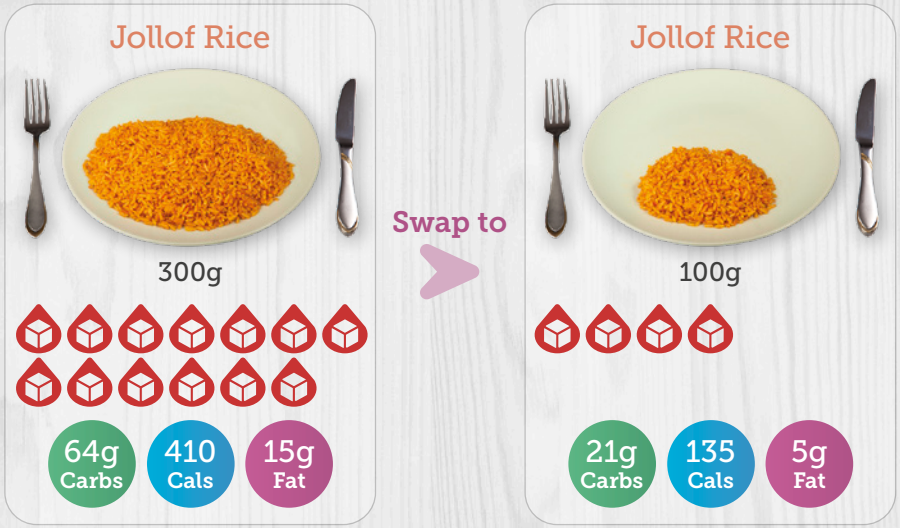
Using the blood glucose icons

1. Decide what you want to eat or drink and **find the meal, drink or snack** in the book.
2. Look at the **portion sizes and blood glucose icons** next to each photo, which indicate the amount of carbs in that portion and its possible effect on your blood glucose level.

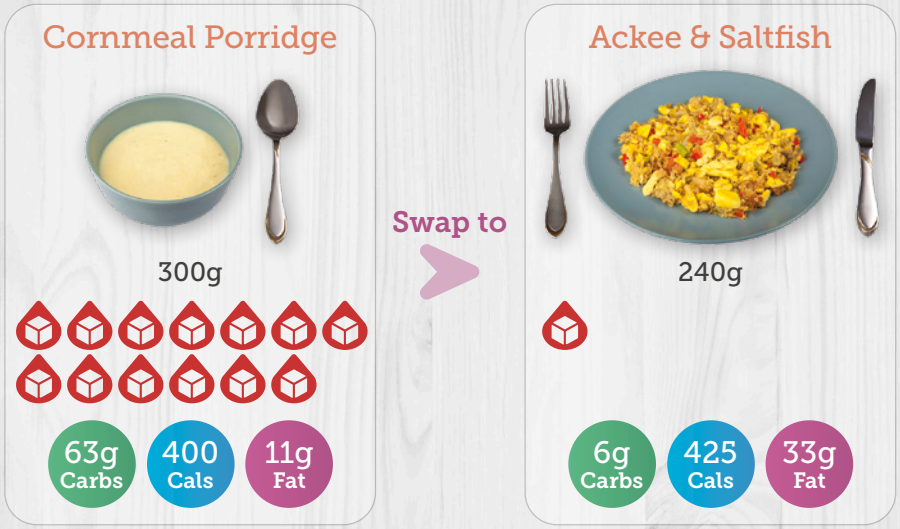
Note: Blood glucose icons are rounded to the nearest 5g carbs. Therefore, a food with 17g carbs rounds to 15g = and a food that has 43g carbs rounds to 45g =

Up to 21 icons can be shown per portion, representing 105g carbs. Where there are more than 105g carbs, a + is shown with a number to indicate the extra blood glucose icons (e.g. page 263).

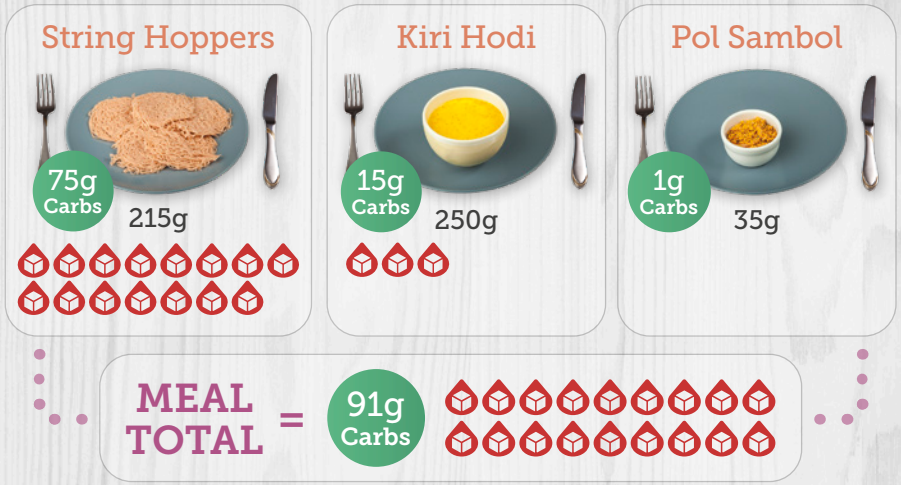
3. If your portion size shows a large number of blood glucose icons, you may wish to **reduce the portion size** to one that shows a lower number of icons.



4. Alternatively, you can **swap to a different food choice** in order to choose a portion that will have a lower impact on your blood glucose levels. See pages 18 to 21 for food swap examples.

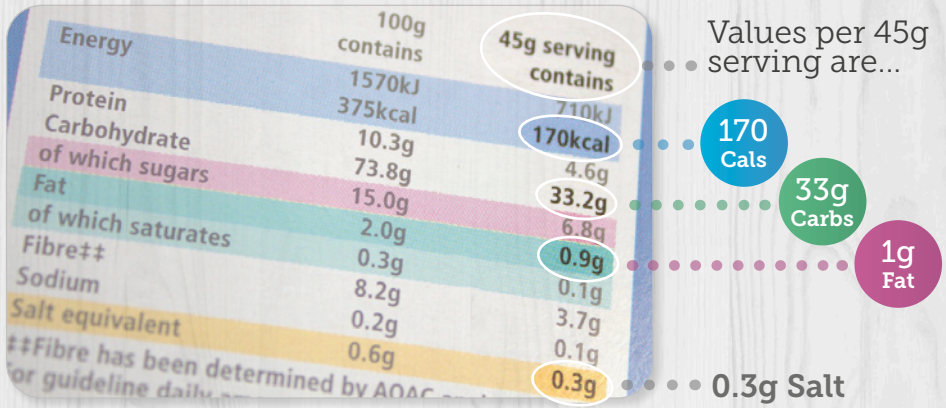


5. If you can't find your whole meal in the book, you may need to **find each component separately** and add up the carb values (and blood sugar icons) for all the items.



Reading food labels

As well as using this book, another method of determining nutrient values is by looking at labels on food packaging. Here is an example of a typical label, highlighting the carbs, calories and fat per serving.



For more details, visit: **www.carbsandcals.com/foodlabels**

Key points when using this book

- To help with scale, each food photo displays either a knife and fork, or a dessert spoon. You may find it useful to measure your own dinnerware, to compare against those in the photos. Alternatively, you may wish to use plates and bowls that are the same size as the ones in the book (the size is displayed at the top of each page as a reminder).

26cm Dinner Plate

20cm Side Plate

22cm Large Bowl

14cm Cereal Bowl

- The weight of each portion is stated below each photo, in case you want to double check the weight of your own portion. **This is always the cooked/prepared weight.**
- Values for carbs and fat are given to the nearest gram. Therefore, if a food has 0.4g of fat, the fat value will be listed as 0g. If a food has 0.6g of fat, the fat value will be listed as 1g. Calorie values are rounded to the nearest 5 calories.
- Each food in the book has between 1 and 3 portion photos to help you easily judge the carb, fat and calorie content of your particular portion, simply by looking at the photos.

Healthy Eating

A balanced diet is important for obtaining and maintaining good health, as it improves general wellbeing, helps with weight management and reduces the risk of long-term conditions such as heart disease, cardiovascular disease (disease of the circulation), type 2 diabetes, cancer and many other conditions.

What does 'healthy eating' really mean?

Nutrients such as carbohydrates, proteins, fats, vitamins and minerals are the building blocks for good health. Foods within our diet are grouped together according to the main nutrients they provide. For example, meat, fish, eggs and nuts are grouped as high quality proteins, whilst milk, cheese and yogurt are grouped as dairy foods and are a rich source of calcium.

Healthy eating means eating a wide variety of nutrient dense foods in the right proportions to achieve and maintain a healthy balanced weight, and provide a range of nutrients such as:

- Antioxidants, vitamins and minerals from fruit and vegetables such as mango, melon, peppers and tomatoes
- Calcium from dairy foods such as milk and yogurt
- B vitamins and fibre from wholegrain carbohydrates such as oats, millet, brown rice and bulgur wheat
- Good quality protein from lentils, fish, meat, nuts and eggs
- Omega-3 oils from oily fish, nuts and seeds

Top tips for healthy eating

Aim for three meals each day

Avoid skipping meals and spread them evenly across the day to keep your energy levels topped up and help you avoid snacking.

Reach your 5-a-day fruit & veg!

The World Health Organisation recommends eating a minimum of 5 portions of fruit and vegetables a day to reduce the risk of long-term conditions such as heart disease and type 2 diabetes. They are packed with vitamins and minerals, are excellent sources of dietary fibre and are low in fat and calories. When choosing fruit & veg, select a rainbow of colours, as this will provide a wider variety of vitamins and minerals. Avoid shop-bought smoothies as these generally contain less fibre than homemade ones.

Eat more fish

Fish is a good source of protein. It is recommended to have at least 2 portions of fish per week (if there is no medical, cultural or religious reason why you can't), including 1 portion of oily fish, such as mackerel, salmon, fresh tuna or trout. Oily fish contains a type of polyunsaturated fat called omega-3, which lowers triglyceride levels and helps protect against heart disease. If fish is not part of your diet, 30g (3 tablespoons) of chia seeds or flax seeds (linseeds) are a vegetarian source of omega-3.

Eat more plant based proteins

Pulses such as beans, peas and lentils (dals) are an excellent source of protein and have many nutritional benefits, including:

- Count towards your 5-a-day fruit & veg
- Low in fat and calories
- High in soluble fibre (known to improve cholesterol levels)
- Pulses have minimal effect on your blood glucose levels

Kidney Beans **80g**

Choose wholegrain carbohydrates

Wholegrain carbs provide energy, are a good source of B vitamins and a great source of fibre. Examples include wholegrain breakfast cereals such as porridge, granary toast, quinoa, couscous and brown rice. Swap chapati flour to wholemeal or millet flour, and add seeds such as chia seeds.

Brown Rice **100g**

Limit sugar and sugary foods

Latest guidelines are to limit our 'free sugar' intake to 30g per day (see page 24 for more info), to address the increasing obesity and type 2 diabetes epidemic. If you choose to have a small amount of added sugar in your diet as a treat, you could choose sugar free options where possible, for example sugar free or diet fizzy drinks and squash. Cutting down your sugar intake in food and drinks will help with weight loss and dental health. Be careful not to replace sugary foods with fatty foods such as crisps, Bombay mix or processed foods as these are high in calories and can cause weight gain.

Choose lower fat dairy products

Milk, yogurt and cheese are a great source of calcium, which is important for keeping our bones and teeth strong. Aim for 3 portions of low fat dairy per day (one portion is 200ml milk or nut milk, 125g pot of yogurt, or a matchbox size piece of cheese).

Soya Milk (unsweetened) **150ml**

Choose healthy fats

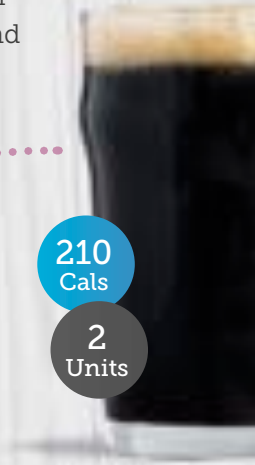
Choose foods high in monounsaturated fats (such as avocado, olive oil and nuts) and polyunsaturated fats (oily fish and seeds). Limit saturated fat to maintain healthy cholesterol levels and for heart health. Suggestions include:

- Remove the visible fat from meat, and skin from chicken
- Choose lean meat cuts and limit the amount of processed meat, such as chicken nuggets and salami
- Measure oil (such as olive or rapeseed) in cooking and salad dressings, limiting it to 1 teaspoon per portion
- Unsalted nuts are a great nutritious snack compared to Bombay mix, cake rusks or crisps

Almonds **10g**

Drink alcohol in moderation

It is recommended that men and women do not drink more than 14 units of alcohol per week (see page 30), spread evenly across the week. Having several alcohol free days a week is a good way to cut down. If weight maintenance or weight loss is your goal, cutting back on alcohol will help, as alcohol is high in calories and these calories have no nutritional value.



Stout **568ml (pint)**

Limit salt intake to 6g per day

A diet that is high in salt can raise your blood pressure, increasing the risk of stroke and heart disease. Use herbs and spices, instead of salt, for flavour and where possible aim to cook fresh rather than relying on processed foods and takeaways. Read food labels (see page 10) to choose lower salt options where possible.

Diabetic products

Diabetic foods are of no benefit to people with diabetes. They tend to be more expensive than the conventional products, can be high in fat and calories, often still affect blood glucose levels and may have a laxative effect.

Healthy snacks & drinks

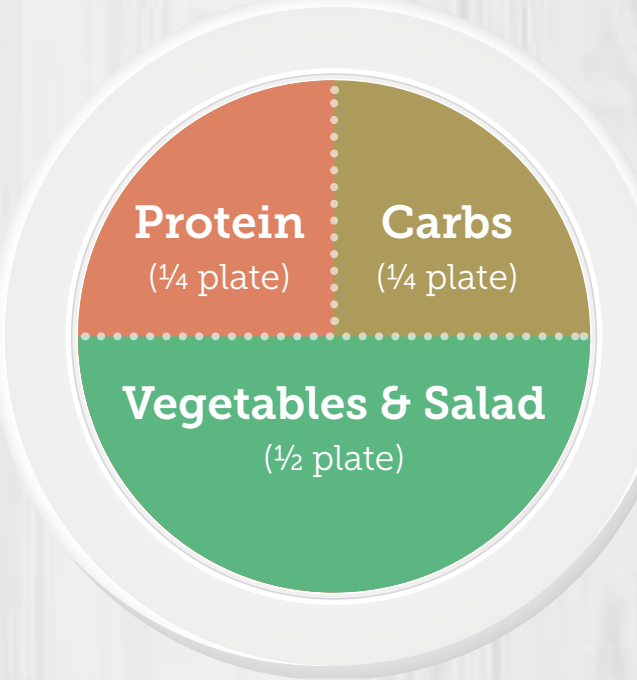
Snacks are often high in calories and fat, and low in nutritional value. Here are a few ideas for healthier snack options. Be aware of portion sizes; for example, nuts contain a variety of nutrients but can contribute significantly to your calorie intake if you have too many.

1. Watermelon
2. Squash (sugar-free)
3. Water
4. Pear
5. Figs
6. Celery & Nut Butter
7. Nuts (unsalted)
8. Popcorn (plain)
9. Tea

How to build a healthy meal

Traditionally, people have eaten carbs as their main source of energy with most of their calories coming from carbohydrate. For people living with (or at risk of developing) type 2 diabetes or those trying to lose weight, the advice would be to change the proportion from a plate mostly full of carbs to the following:

1. Add **vegetables and salad** to your plate first, ensuring ½ the plate is filled with veg and salad.
2. Then add your **carb foods** to the plate. Ideally this will be no more than ¼ of the plate.
3. Finally, add your **protein source** to the remaining ¼ of the plate.



This process is a simple but effective way to ensure you have a balanced meal with plenty of vegetables, a moderate amount of carbs, and a source of protein with each meal.

The following pages contain examples of a few healthy meal suggestions and swaps of traditional African, Arabic, Caribbean and South Asian foods. These demonstrate how you can reduce carb, fat and calorie content, whilst still giving you a satisfying, appetising meal.

Healthy meal swaps

African healthy meal swaps

Fish Stew, Coconut Rice, & Fried Plantain

300g stew, 350g rice, 60g plantain

+10

147g Carbs | 1200 Cals | 53g Fat

Swap to

Fish Stew, Coconut Rice, Fried Plantain & Salad

200g stew, 150g rice, 30g plantain, 50g salad

70g Carbs | 645 Cals | 31g Fat

Stomach & Rice

250g stomach, 525g rice

+18

183g Carbs | 1215 Cals | 38g Fat

Swap to

Salmon, Spaghetti & Salad

180g salmon, 100g spaghetti, 150g salad

28g Carbs | 570 Cals | 28g Fat

Arabic healthy meal swaps

Quzi ala Timman

350g lamb, 320g rice

+3

108g Carbs | 1090 Cals | 38g Fat

Swap to

Kebab, Khubz & Salad

200g kebab, 50g bread, 100g salad

30g Carbs | 565 Cals | 28g Fat

Kousa Bil Laban & Khubz

500g kousa, 150g bread

+4

117g Carbs | 910 Cals | 32g Fat

Swap to

Falafel, Khubz & Tabbouleh Salad

105g falafel, 30g bread, 150g salad

41g Carbs | 340 Cals | 15g Fat

Caribbean healthy meal swaps

Fish, Dumplings, Green Banana, Yam & Coleslaw

200g fish, 260g dumplings, 100g green banana, 140g yam, 65g coleslaw

+22

204g Carbs | 1435 Cals | 54g Fat

Swap to

Fish, Rice & Peas with Greens

100g fish, 100g rice & peas, 100g greens

37g Carbs | 450 Cals | 25g Fat

Stewed Chicken, Rice & Salad

600g stew, 300g rice, 30g salad

+4

113g Carbs | 1170 Cals | 23g Fat

Swap to

Stewed Chicken, Rice, Vegetables & Salad

300g stew, 100g rice, 200g veg, 30g salad

54g Carbs | 600 Cals | 12g Fat

South Asian healthy meal swaps

Chicken Curry & Rice

450g curry, 300g rice

+3

110g Carbs | 1080 Cals | 55g Fat

Swap to

Chicken Curry, Rice & Salad

175g curry, 100g rice, 100g salad

39g Carbs | 410 Cals | 22g Fat

Vegetable Curry & Chapati

450g curry, 180g chapati

+4

116g Carbs | 795 Cals | 32g Fat

Swap to

Tarka Dal, Vegetables, Chapati & Salad

175g dal, 125g veg, 25g chapati, 100g salad

45g Carbs | 380 Cals | 17g Fat

Nutrients in Food

There are 3 main nutrients in the diet (known as macronutrients):

- **Carbohydrates** (such as roti, chapati, yam, rice and potato)
- **Fat** (such as butter, ghee, olive oil and coconut oil)
- **Protein** (such as pulses, lentils, tofu, fish and meat)

The food we eat is usually a mixture of different amounts of these 3 macronutrients.

Carbohydrate

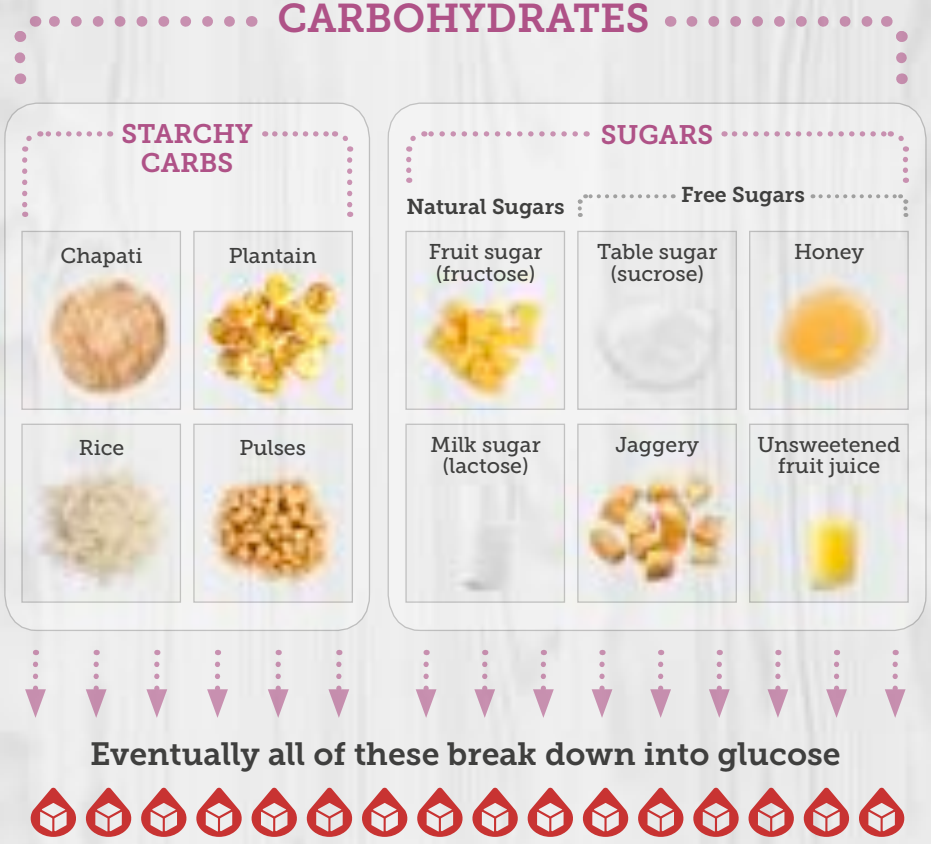
The term carbohydrate covers a wide variety of foods, from the sugar we put in hot drinks to the rice on our plates. In recent times, some people have become wary of carbs. However, our bodies need to have some carbohydrate as it is one of the body's main sources of glucose for energy, and the brain's preferred source of energy. Carbs provide 4 calories of energy per gram.

The two main types are starchy carbohydrates and sugars:

Starchy carbs include bread, pasta, chapatis, potatoes, dumplings, yam and cereals.

Sugars can be categorised as natural sugars and added sugars (or 'free sugars'). Free sugars include those added to food by manufacturers, cooks or consumers (such as granulated or Demerara sugar) and those naturally present in honey, syrups and unsweetened fruit juice.

It is important to remember that blood glucose is not only affected by the amount of carbohydrate in a food but also by whether it is refined or not, how it is cooked and what it is eaten with. High fibre, starchy carbs release glucose into the blood more slowly than sugary foods and drinks.



How much carbohydrate should I eat each day?

In African, Arabic, Caribbean and South Asian communities, the traditional diet often contains up to 60% carbohydrate. Given that carbs have such an impact on blood glucose levels, it may be wise to consider reducing your carb intake. For people with type 2 diabetes, this can be a way to help improve day-to-day blood glucose levels. In some instances, this means that people are able to reduce their medication, may not have to increase medication, or can even stop their medication completely.

For those at risk of developing type 2 diabetes, the same principles apply - reducing carbohydrate intake can be a way of minimising the risk of developing the condition.

What does 'low carb' mean?

The term 'low carb' means different things to different people. This type of diet can be defined as one containing between 50g and 130g carbs per day. As a strategy, a lower carb diet can be effective in managing weight, improving glycaemic control. However, when a person cuts back on carbs, they sometimes inadvertently increase the protein and fat in their diet, so it's useful to seek advice from a dietitian or healthcare professional to ensure that your diet is nutritionally adequate and fits your lifestyle and cultural preferences.

Do I need to limit free sugars?

Sugar should not play a significant role in our diet! The excess calories that we consume through added sugars have been linked to the rise in obesity. In 2015, the Scientific Advisory Committee on Nutrition (SACN) updated its recommendations for the amount of free sugars in our diet, to address the growing obesity and diabetes crisis and reduce the risk of tooth decay.

4-6 year old
19g per day
(5 cubes)

7-10 year old
24g per day
(6 cubes)

11 years +
30g per day
(7 cubes)

SACN advises that free sugars should account for **no more than 5%** of a person's daily calorie intake.

There are many ways that we can reduce the added sugar in our diet by swapping high sugar foods, drinks, snacks and desserts for lower sugar alternatives, such as:

- Replacing sugary drinks with no-added-sugar squash
- Choosing a plain oatcake or cracker instead of a sweet biscuit
- Replace sugar coated breakfast cereals with wholegrain cereals

Glycaemic Index

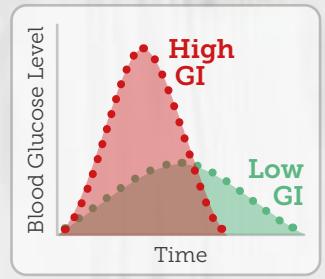
The rate at which carbs are broken down depends on the type of carbohydrate consumed; this is known as the Glycaemic Index (GI).

Foods or drinks with a **high GI** are broken down quickly, causing a rapid rise in blood glucose levels.

Foods with a **low GI** are broken down slowly, giving a more gradual rise in blood glucose levels.

For people with diabetes, having an idea of the GI of food and drink can be helpful in predicting blood glucose fluctuations after eating or drinking. A healthcare professional can help you with more information on this subject.

It is important to keep in mind that GI does not take into account the other nutrients in a meal (protein, fat and fibre, which can slow down the absorption of glucose in the blood) or the *amount* of carbs in the meal, which is a much better predictor of how high your blood glucose levels will go.



Important note: For people with type 1 diabetes, it is important to note that certain foods release glucose at a very slow rate and may not require insulin, or may require a reduced dose. Examples include foods such as pearl barley, peas, beans, lentils and some vegetables such as sweetcorn, squash, pumpkin and parsnips. It is advisable to speak to your diabetes team about your insulin requirements for these foods as they vary from person to person and depend on the portion size consumed.

Protein

Protein has a number of vital uses in the human body:

- Maintenance, repair and growth of cells
- Proper functioning of the immune system
- Production of hormones and enzymes

Sources of protein include meat, fish, eggs, pulses, nuts, tofu and dairy products.

How much protein do I need?

For most adults, 1g of protein per kg of body weight is enough to meet the daily requirements. For example, if you weigh 70kg, a protein intake of 70g per day is sufficient. In the UK, protein intake is usually in excess of requirements.

Protein acts as an additional source of fuel, providing 4 calories of energy per gram (the same as carbs) and also provides the building blocks for muscle repair and development.

Can I eat more than the recommendation?

Some high protein foods (such as full fat dairy products and meat) are high in saturated fat, which may be detrimental for heart health.

Consuming larger quantities of protein has not been shown to improve sports performance or increase muscle mass. The body is only able to use a certain amount of protein and eating large amounts (including protein shakes) offers no additional nutritional benefit.

If you have kidney disease, your healthcare professional may recommend to limit your protein intake.

Fat

Yes, fat is a nutrient! It is important because it is a major source of energy for the body and is essential for the absorption of fat-soluble vitamins A, D, E and K. It also insulates the body, providing a protective layer around the essential organs.

Fat contains the most energy (9 cals per gram) compared to carbs, protein and alcohol, so eating too much fat can lead to weight gain. Aim to use less oil and spreads in your diet, always measuring oil when cooking (use 1 teaspoon of oil per person per dish).

Main types of fat

Saturated fat can raise total cholesterol and unhealthy LDL cholesterol levels, increasing the risk of heart disease with excessive consumption

Sources: Higher amounts are found in animal products, such as butter, cream, cheese, meat, and processed foods like pastries, cakes and biscuits

Trans fat has a similar effect to saturated fat, and increases unhealthy LDL but also lowers healthy HDL

Sources: Margarines, processed foods, takeaway foods, and also produced when ordinary oils are heated to fry foods at a very high temperature

Monounsaturated fat lowers unhealthy LDL cholesterol levels, but does not lower healthy HDL levels, thus decreasing the risk of heart disease

Sources: Olive and rapeseed oil, some nuts (e.g. almonds and cashews) and seeds, avocados and in some spreads

Polyunsaturated fat lowers unhealthy LDL cholesterol levels, but may also lower healthy HDL cholesterol levels. Omega-3 (found in oily fish) lowers blood triglyceride levels.

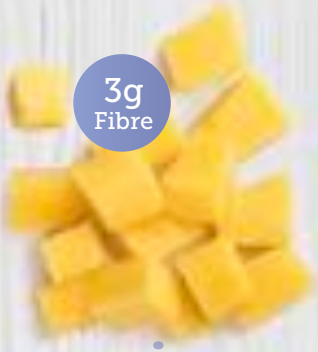
Sources: Sunflower oil and spreads, corn oil, oily fish (such as mackerel), walnuts and seeds

This book displays the fat content for all food and drink portions, to help you monitor your fat intake.

Fibre

What's all the fuss about fibre?

Dietary fibre is only found in foods of plant origin, such as fruit, vegetables, cereals and pulses. It has no calories and it passes through the gut largely undigested. There are two types of fibre, soluble and insoluble, and most foods containing fibre have a mixture of the two.



Why should I eat fibre?

Strong evidence shows that increasing total fibre intake, particularly cereal grains and wholegrains, is associated with a lower risk of heart disease, strokes and bowel cancer. Increasing fibre intake can help with weight loss, as it slows down the rate that the stomach empties, keeping you fuller for longer. The proven benefits of fibre have led the SACN to change the guidelines, advising people to increase their daily intake of fibre. The new recommendations are:

Age Range	Fibre Intake per day
2 - 5 years	15g
5 - 11 years	20g
11 - 16 years	25g
16 - 18 and older	30g

How can I reach 30g fibre per day?

The average fibre intake is only 18g per day. To meet the new guideline, we need to change our eating habits to include plenty of fruit and veg, and opt for wholegrain foods (such as porridge oats, brown rice, wholemeal spaghetti and breads) as often as possible. See the simple food swaps opposite to boost your fibre intake.

Source of Fibre

Throughout the book, look out for the fibre icon, indicating foods that have 3g fibre per portion. (For foods with multiple portions, the middle portion has at least 3g fibre.)

Simple fibre swaps

Corn Flakes v Oats

Choose oats to boost your intake of insoluble fibre, and help slow down the rate at which glucose enters the bloodstream

White v Brown Rice

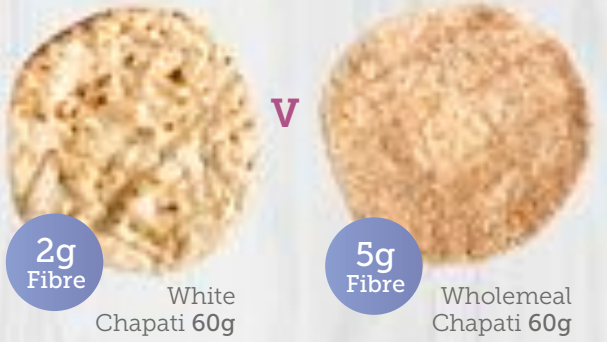
The insoluble fibre in brown rice helps to keep your bowels moving, reducing the risk of constipation

Biscuits v Nuts

Soluble fibre in unsalted nuts can help lower cholesterol, reducing the risk of heart disease and stroke

White Chapati v Wholemeal Chapati

Choose wholemeal chapatis to increase your intake of insoluble fibre, which speeds up the time it takes for food to pass through your gut, aiding a healthy, regular digestive system



Important note: Any increase in dietary fibre consumption should be accompanied by an increase in fluid intake.

Alcohol

What's the limit?

Exceeding the recommended alcohol limit of **14 units per week** and/or binge drinking can contribute to a number of health problems, such as liver disease, cancer and obesity. Have at least one alcohol free day per week. This is what 14 units looks like:

6 Pints
4% Stout
= 14 units

Stout
568ml
(pint)

6 Glasses
13% Wine
= 14 units

Red Wine
175ml
(medium glass)

14 Shots
40% Spirits
= 14 units

Rum
25ml
(shot)

Over the years, the alcohol content of drinks has risen, so drinks may contain more alcohol than you think. Alcohol units have been included in this book to help you monitor your alcohol intake.

If you are adjusting insulin, use carb values for alcohol as a reference guide only, as it is usually not recommended to take additional insulin for alcoholic drinks. **Take extreme caution when giving additional insulin with alcohol**, as alcohol is associated with an increased risk of hypos. Your diabetes team can advise you on this.

Does alcohol provide any nutritional benefit?

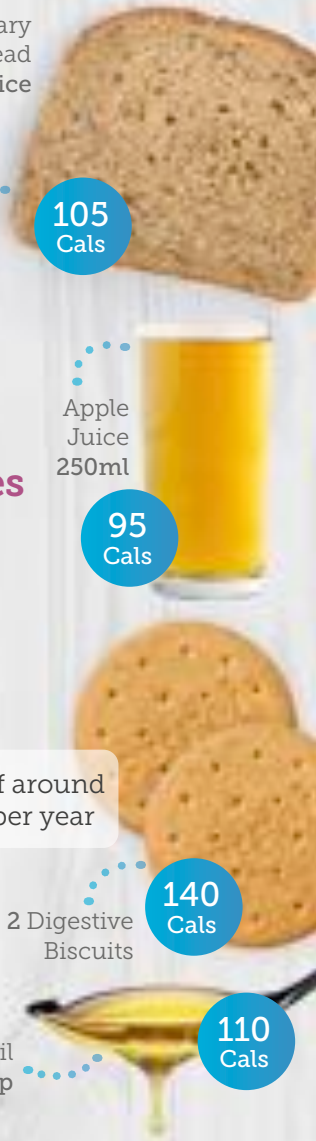
Alcohol contains 7 calories of energy per gram and these are 'empty calories', meaning they have no nutritional value – an important consideration for weight management. To reduce calorie intake, choose sugar free mixers instead of sugary ones or fruit juice.

Calories

Calories are not nutrients in themselves; they are the units used to measure the amount of energy in food. The number of calories varies according to the nutrients in each food. The calorie content per gram of carbs, protein, fat and alcohol is as follows:

- 1g carbs = 4 cals
- 1g protein = 4 cals
- 1g fat = 9 cals
- 1g alcohol = 7 cals

Fat has more than twice the amount of calories per gram compared to carbs and protein, which explains why if you eat foods that are high in fat, you are likely to consume more calories and gain weight.



How many cals should I aim for?

Age, gender, physical activity and weight goal (loss, maintenance, or gain) all affect calorie needs. A healthcare professional can help you with this. The reference intake is 2,000 cals daily for an average adult with no special dietary needs.

Benefits of understanding calories

Understanding calories in food helps you choose portions to avoid excess, select healthier options and maintain a healthy weight. If you are gaining weight, you are consuming more calories than you burn through physical exercise, including everyday activities. This can easily happen:

100 cals per day extra = **36,500 cals** over a year = Weight gain of around **5 kg / 11 lb** per year

This book makes it easier to see where you can reduce portion sizes or make lower fat and calorie choices in order to lose weight. It can also help you to identify where you can make small changes that actually make a big overall difference.

Guide to Weight Loss

What is a healthy weight?

Body Mass Index (BMI)

BMI is a measure of weight in relation to height, and tells you whether you are a healthy weight. You can use our online BMI calculator at www.carbsandcals.com/BMI, ask your healthcare team, or work it out yourself using the following equation:

BMI = Weight (kg) ÷ Height (m)^2

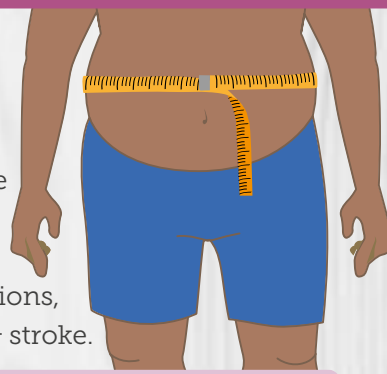
Once you have your BMI, you can see which range it falls into by comparing it to this table. For those from African, Asian and Caribbean backgrounds, the healthy BMI (representing a lower risk for future cardiovascular conditions) is slightly different:

BMI	BMI for African, Asian & Caribbean	Category
Under 18.5	Under 18.5	Underweight
18.5 - 24.9	**18.5 - 22.9**	**Healthy weight**
25 - 29.9	23 - 27.9	Overweight
30 - 35	28 - 33	Obese
Over 35	Over 33	Morbidly obese

People from Africa, Asia and the Caribbean are encouraged to aim for the lower BMI targets above because they have 4 to 6 times more risk of developing type 2 diabetes, which develops at an earlier age.

Important note: if you have a large amount of muscle, your BMI may be in the overweight range even though you have little body fat. You can double check your risk by measuring your waist (see next page).

Waist circumference



Waist circumference, an indication of body fat distribution, is another way to check your risk. Measure the circumference of your waist at the midway point between the bottom of your ribs and top of your hips. The table below shows waist sizes with increased risk of health conditions, such as type 2 diabetes, heart disease, cancer & stroke.

	At Increased Risk	At High Risk
Men	Over 94cm / 37 inches **Asian:** Over 90cm / 35.5 inches	Over 102cm / 40 inches
Women	Over 80cm / 31.5 inches	Over 88cm / 34.5 inches

Weight loss, blood glucose levels and diabetes

Weight loss is the primary strategy to control blood glucose levels in overweight or obese people with type 2 diabetes. People with type 1 diabetes should also keep to a healthy weight, as being overweight increases the risk of complications, such as heart disease.

To lose weight healthily and keep it off for good, reduce your total calorie intake and increase your physical activity. It is still unclear which is the most effective weight loss plan and which proportion of carbs, fat and protein people with diabetes should consume in order to lose weight.

Planning a weight loss strategy

Setting realistic expectations is key to weight loss. Losing weight gradually is more beneficial in the long-term. Studies show that losing 5-10% of your body weight can bring significant health benefits, including reduced blood pressure, cholesterol and risk of type 2 diabetes. Aiming for 500 fewer calories daily can help you lose 0.5kg (1lb) per week.

If you don't achieve your target or you regain some of the weight, do not despair! Accept the occasional slip-up as a learning experience, focus on your aim and the progress you have made. Whatever your goal, discuss any diet plans with your healthcare team. Let them know your main aim and they will help you with realistic short and long-term strategies.

Which diet is right for me?

Calorie reduction and weight loss can be achieved in a number of ways, and different diets suit different people. Some aren't considered to be nutritionally balanced because they don't provide all the nutrients your body requires. They usually involve cutting out whole food groups (e.g. carbs), which is unnecessary and could even be dangerous. A registered dietitian or healthcare professional can advise about which short and long-term diets may suit you.

★ Low Calorie

Diets of 800 to 1,600 calories per day can be achieved through careful selection of foods and controlling portion sizes.

★ Low Fat

Fat contains more calories than any other nutrient, so reducing the fat content of foods is a great way to lower calorie intake.

★ Very Low Calorie

This usually involves eating under 800 calories per day for up to 12 weeks. Very low calorie diets should only be followed under supervision, ideally by a registered dietitian. Check out our Very Low Calorie Recipes & Meal Plans book at **www.carbsandcals.com/VLC**

★ Low Carb / High Protein

Protein helps you to feel fuller for longer, so boosting protein and reducing the amount of carbs may help to lower overall calories. Depending on the level of carb restriction and on careful selection of foods, it should be possible to achieve a healthy balance with this diet.

★ Intermittent Fasting / 5:2 Diet

Fasting 2 days per week and eating a healthy balanced diet on the remaining 5 days achieves a 25% reduction in calories. Other forms of fasting include alternate day fasting, or fasting for a certain number of hours (e.g. 16 hours). Check out our 5:2 Diet book at **www.carbsandcals.com/5-2**

Evidence shows that different diets can work, if you stick to them! Find a diet that suits you and your lifestyle.

Diabetes

Diabetes is a condition in which the glucose levels in the blood are too high, because the body cannot use the glucose properly. Diabetes can lead to heart disease, eye and kidney problems, foot disease and diseases of the circulation. These risks can all be reduced by carefully managing the condition. This involves keeping blood glucose, blood fats and blood pressure levels within the normal range and maintaining a healthy, active lifestyle.

Type 1 diabetes

Type 1 diabetes develops when the body's immune system destroys the cells of the pancreas that produce insulin. The pancreas is then unable to produce insulin, leading to increased blood glucose levels. It is treated by daily insulin administration, through injections or a pump. Insulin is vital treatment for those living with type 1 diabetes.

Check out the #1 bestselling book and app for diabetes at **www.carbsandcals.com**

Type 2 diabetes

Type 2 diabetes is more common than type 1 (accounting for 90 to 95% of all cases of diabetes in the UK), especially in Black, Asian and Minority Ethnic communities. It develops when the pancreas does not produce enough insulin, or when the body can't use the insulin effectively (known as insulin resistance). Type 2 diabetes is often associated with being overweight and usually occurs after the age of 40, although in people of African, Caribbean and South Asian origin it often appears from the age of 25. It is also becoming more common in younger people of all ethnicities, due to the rising levels of obesity.

Physical exercise

The foundation of treatment for type 2 diabetes is a healthy diet and increased physical activity. Counting steps is an easy way of getting your daily recommendation of exercise. This can be done by using a simple pedometer or mobile phone. Aim for a minimum of 10,000 steps every day.

Sometimes following a healthy eating plan and being physically active is not enough to control blood glucose levels. If this is the case, your healthcare team may advise you to take diabetes medication and/or insulin.

Is it possible to prevent or reverse type 2 diabetes?

There is strong evidence that lifestyle changes, including weight loss strategies such as calorie restriction, can prevent type 2 diabetes in high-risk individuals. Every 1kg lost can lead to a 16% reduction in the risk of developing the condition for overweight people.

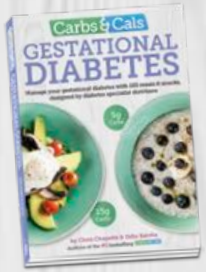
A recent landmark study showed that losing 15kg of body weight could lead to a reversal of type 2 diabetes, especially if this is done within the first few years of diagnosis. This is also referred to as "remission" because if the weight is regained, then the diabetes can come back.

Structured education programmes

There are many programmes offered in the UK, such as:

Type 1 diabetes	Type 2 diabetes	Type 1 & 2 and those at risk of developing diabetes
DAFNE, BERTIE	Desmond	X-PERT HEALTH

Carbohydrate counting



Carbohydrate is the main nutrient that affects the rise in blood glucose levels, and therefore carb counting has a key role in the management of type 1 diabetes. Carbohydrate counting is also being incorporated into the education and management of type 2 diabetes and diabetes in pregnancy (known as gestational diabetes).

Carb counting for type 1 diabetes

For people with type 1 diabetes, carbohydrate counting allows them to adjust their insulin dose according to their carb intake (in meals, snacks and drinks) and manage everyday life including:

- alcohol intake
- stress
- illness
- activity levels including sports and hobbies

There is strong evidence that matching insulin doses to carb intake improves blood glucose levels. Understanding and learning about carbs in food and drinks allows insulin doses to be adjusted accurately, to keep blood glucose levels as near normal as possible. Healthy dietary principles already discussed in this book and regular physical activity are also important in the management of type 1 diabetes.

Carb counting for type 2 diabetes

The evidence about the effectiveness of carbohydrate counting for type 2 diabetes, even in those treated with insulin, is still inconclusive. What we do know is the larger the carb intake, the greater the rise in blood glucose levels after eating. Therefore, carbohydrate counting or awareness can help people with type 2 diabetes manage their carbohydrate intake for meals, snacks and drinks, and may be an effective strategy in controlling blood glucose levels and weight loss or maintenance.

People with type 2 diabetes on a flexible insulin regimen may find that matching their insulin dose to carbohydrate improves their blood glucose levels. Your healthcare team will be able to provide you with the appropriate advice on which treatment is best for you.

26cm Dinner Plate

Beef Stew, Pap & Greens

Source of Fibre

Beef stew with tomatoes, peppers and onions, served with pap (white maize meal mixed with water) and greens

125g stew, 175g pap, 80g greens

EFFECT ON BLOOD GLUCOSE

58g Carbs | 510 Cals | 22g Fat

250g stew, 350g pap, 80g greens

EFFECT ON BLOOD GLUCOSE +4

115g Carbs | 1005 Cals | 43g Fat

375g stew, 525g pap, 160g greens

EFFECT ON BLOOD GLUCOSE +16

173g Carbs | 1515 Cals | 65g Fat

26cm Dinner Plate / 14cm Cereal Bowl

Black Eye Bean Stew & Gari

Source of Fibre

Stew with beans, tomatoes, peppers and onions, served with gari / eba (cassava flour mixed with water)

175g stew, 100g gari

EFFECT ON BLOOD GLUCOSE

44g Carbs | 290 Cals | 10g Fat

350g stew, 200g gari

EFFECT ON BLOOD GLUCOSE

88g Carbs | 580 Cals | 20g Fat

500g stew, 400g gari

EFFECT ON BLOOD GLUCOSE +13

158g Carbs | 960 Cals | 30g Fat

26cm Dinner Plate

Falafel, Khubz & Salad

Source of Fibre

Deep fried chickpea patties, served with flatbread and salad

EFFECT ON BLOOD GLUCOSE

70g falafel, 30g bread, 100g salad

30g Carbs | 225 Cals | 9g Fat

EFFECT ON BLOOD GLUCOSE

140g falafel, 60g bread, 100g salad

58g Carbs | 440 Cals | 17g Fat

EFFECT ON BLOOD GLUCOSE

210g falafel, 90g bread, 100g salad

87g Carbs | 650 Cals | 25g Fat

26cm Dinner Plate

Hashweh

Rice dish made with meat, carrots, peas, onions, spices and pine nuts

EFFECT ON BLOOD GLUCOSE

100g

22g Carbs | 170 Cals | 6g Fat

EFFECT ON BLOOD GLUCOSE

210g

46g Carbs | 355 Cals | 14g Fat

EFFECT ON BLOOD GLUCOSE

320g

69g Carbs | 540 Cals | 21g Fat

26cm Dinner Plate

Curried Goat with Rice & Peas

Source of Fibre

Mutton or goat cooked with onions, herbs and spices, served with rice and peas

100g curry, 100g rice & peas

EFFECT ON BLOOD GLUCOSE

30g Carbs | 325 Cals | 17g Fat

200g curry, 200g rice & peas

EFFECT ON BLOOD GLUCOSE

60g Carbs | 650 Cals | 34g Fat

300g curry, 300g rice & peas

EFFECT ON BLOOD GLUCOSE

90g Carbs | 975 Cals | 51g Fat

26cm Dinner Plate

Fish, Dumplings, Banana & Yam

Source of Fibre

Fried fish served with boiled dumplings, steamed green banana, boiled yam, coleslaw and salad

100g fish, 120g dumpling, 50g banana, 70g yam, 65g slaw

EFFECT ON BLOOD GLUCOSE

100g Carbs | 760 Cals | 33g Fat

200g fish, 190g dumplings, 75g banana, 70g yam, 65g slaw

EFFECT ON BLOOD GLUCOSE +10

145g Carbs | 1190 Cals | 54g Fat

200g fish, 260g dumplings, 100g banana, 140g yam, 65g slaw

EFFECT ON BLOOD GLUCOSE +22

204g Carbs | 1435 Cals | 54g Fat

26cm Dinner Plate

Halwa Puri & Chana

Source of Fibre

Traditional breakfast of chickpea curry and sweet semolina pudding with deep fried flatbread

EFFECT ON BLOOD GLUCOSE

100g halwa, 80g puri, 100g chana

94g Carbs | 745 Cals | 38g Fat

EFFECT ON BLOOD GLUCOSE +6

100g halwa, 160g puri, 100g chana

123g Carbs | 1040 Cals | 55g Fat

EFFECT ON BLOOD GLUCOSE +18

150g halwa, 240g puri, 150g chana

184g Carbs | 1555 Cals | 83g Fat

26cm Dinner Plate

Idli, Sambar & Chutney

Source of Fibre

Steamed cakes made from fermented black lentils and rice, served with vegetable curry and coconut chutney

EFFECT ON BLOOD GLUCOSE

50g idli, 150g sambar, 50g chut

34g Carbs | 385 Cals | 25g Fat

EFFECT ON BLOOD GLUCOSE

100g idli, 150g sambar, 80g chut

49g Carbs | 540 Cals | 33g Fat

EFFECT ON BLOOD GLUCOSE

150g idli, 300g sambar, 80g chut

79g Carbs | 780 Cals | 45g Fat

26cm Dinner Plate

Rice (basmati)

100g

EFFECT ON BLOOD GLUCOSE

32g Carbs | 145 Cals | 1g Fat

225g

EFFECT ON BLOOD GLUCOSE

71g Carbs | 320 Cals | 2g Fat

355g

EFFECT ON BLOOD GLUCOSE

+3

112g Carbs | 510 Cals | 3g Fat

26cm Dinner Plate

Rice (brown)

Source of Fibre

100g

EFFECT ON BLOOD GLUCOSE

29g Carbs | 130 Cals | 1g Fat

220g

EFFECT ON BLOOD GLUCOSE

64g Carbs | 290 Cals | 2g Fat

345g

EFFECT ON BLOOD GLUCOSE

101g Carbs | 455 Cals | 3g Fat

Index of Foods

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Awards

Diabetes Collaboration Initiative of the Year at the QiC Awards 2019

BDA 2019 Elizabeth Washington **Award for Educational Work**

Primary Care Innovation of the Year Finalist at the HSJ Awards 2019

Clinical Improvement Award Finalist at the GP Awards 2019

Best Dietary Management Initiative at the QiC Awards 2014

New Product of the Year in the Complete Nutrition Awards 2012

BDA 2011 Dame Barbara Clayton **Award for Innovation & Excellence**

Carbs & Cals

Quality in Care 2019 WINNER of Diabetes Collaboration of the Year

The Association of UK Dietitians BDA WINNER of the 2019 Elizabeth Washington Award

HSJ AWARDS 2019 Finalist Primary Care Innovation of the Year

GENERAL PRACTICE AWARDS FINALIST Clinical Improvement Award 2019: Chronic Conditions Category

Quality in Care 2014 WINNER of Best Dietary Management Initiative

CN awards WINNER 2012 NEW PRODUCT OF THE YEAR

The Association of UK Dietitians BDA WINNER of the 2011 Dame Barbara Clayton Award

About the Authors

Salma Mehar BSc (Hons) PG Cert RD

Diabetes Specialist Dietitian

Salma has been in community diabetes care for over 15 years. She is currently working with the Diabetes Transformation Programme, developing educational resources for BAME populations to improve health literacy and outcomes across the globe. Salma has been featured in many South Asian radio and newspaper interviews, spreading vital health messages to a wider audience.

Dr Joan St John MBChb MRCGP MSc

GP with Special Interest in Diabetes

Joan was one of the first Diabetes UK Clinical Champions and has always maintained an interest in health conditions that disproportionately affect BAME communities. Her driving force is promoting education and knowledge to empower individuals about health and wellbeing. She has worked with the Sickle Cell Society, Culture Dementia and the Alzheimer's Society.

Salma & Joan's collaboration on this work was presented at the International Diabetes Federation in Abu Dhabi in 2017, and received the award for Best Poster at both the European Primary Care Diabetes Society in Barcelona and the Primary Care Diabetes Society Conference in Birmingham in 2018.

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Diabetes Specialist Dietitian

Chris works with people with type 1, type 2 and gestational diabetes within the NHS. He is a co-creator of Carbs & Cals and is widely published in academic journals on diabetes and weight management. Chris lectures at national conferences and regularly appears in the media as a respected nutrition specialist.

Yello Balolia BA (Hons)

Creative Entrepreneur

Yello founded Chello Publishing with Chris, to publish Carbs & Cals (**www.carbsandcals.com**), the bestselling and multi-award-winning book and app for diabetes. He has also undertaken a series of creative projects including The Cure for Normal: a YouTube channel inspiring people to look at the world differently (**www.curefornormal.com**), Magical: a 3-day music & arts festival (**www.magicalfestival.co.uk**), private art commissions (**www.yellobalolia.com**) and Ukulology: a visual way of learning the ukulele (**www.ukulology.com**).

Choose the foods and portion sizes to manage your diabetes and weight

Nationally recognised as the leading resources for diabetes and weight loss, the bestselling Carbs & Cals books show hundreds of food photos making counting carbs and calories a breeze.

This edition is filled with a range of African, Arabic, Caribbean and South Asian foods, and is the essential resource for diabetes management, carb awareness, weight loss, portion control and healthy eating.

EFFECT ON BLOOD GLUCOSE

31g Carbs | 130 Cals | 0g Fat

EFFECT ON BLOOD GLUCOSE

90g Carbs | 380 Cals | 1g Fat

Features

- 750 photos of food & drinks commonly consumed by African, Arabic, Caribbean and South Asian communities
- Includes sections for Meals, Sides, Snacks, Breads, Desserts & Drinks
- Carb content clearly displayed using blood glucose icons, highlighting each portion's possible effect on blood glucose level
- Values for calories & fat also shown
- Up to 3 portion sizes for each food

For more info about our bestselling and multi-award-winning books & app, visit:
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ISBN 978-1-9082612-5-0
9 781908 261250

£12.99
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