



HEALTH RESULTS

EXPLORE, MEASURE & IMPROVE your inner *(metabolic)* health



Reverse  
Type 2 Diabetes  
with a Low-  
Carbohydrate Diet



**Disclaimer.** This book is provided as information only and should not be considered clinical advice or recommendation. Great care has been taken in creating this book; however, the accuracy of the information cannot be relied on for your personal medical needs. If you have type 2 diabetes you must discuss your treatment and management needs with an appropriate healthcare professional. If you take medication it is important to review dosages before undertaking any significant dietary change.



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## Welcome

**This book has been written to give you the essential information you need to improve your type 2 diabetes using a low-carbohydrate diet.**

We believe everyone should know it is possible for type 2 diabetes to be significantly improved. Improvement and reversal of type 2 diabetes means better blood glucose control and needing less medication.

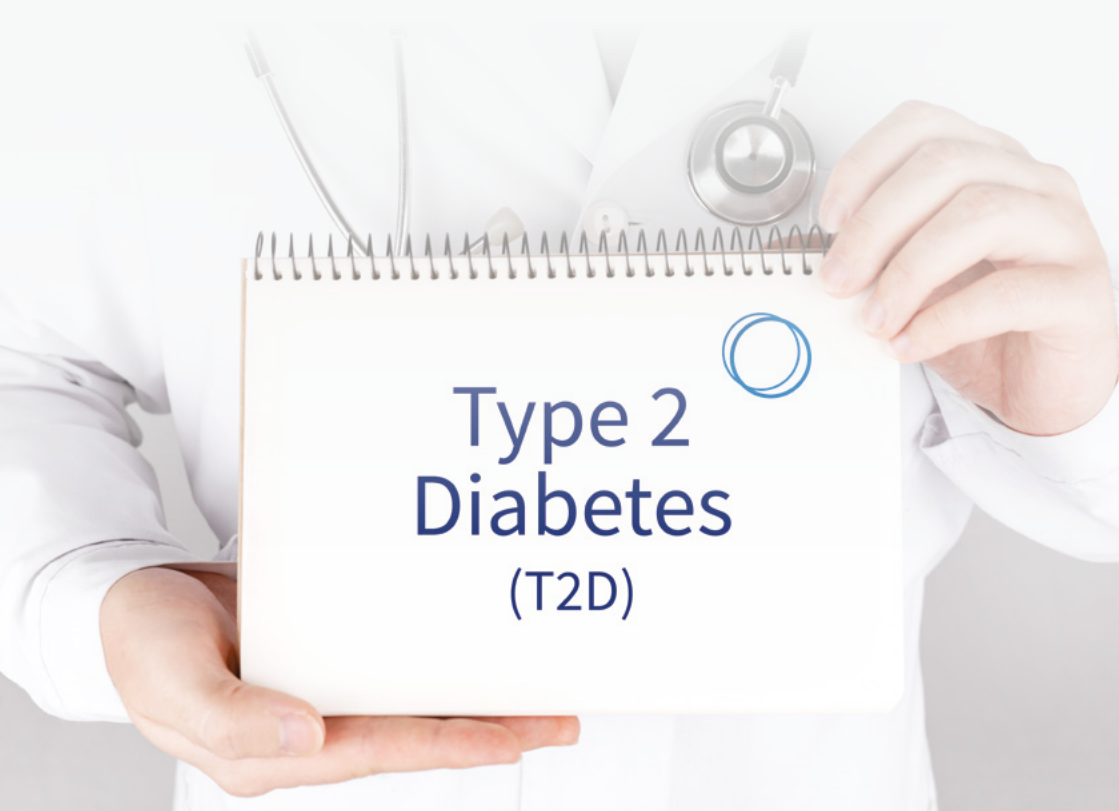
We hope this book will help you on your journey to improved health, and a happier future.

### **The Health Results Team**

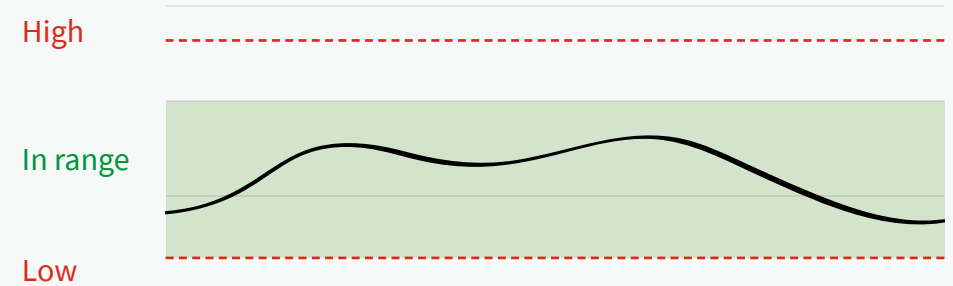


# Introduction

Type 2 diabetes (T2D) is a condition diagnosed by, high blood sugar. In T2D the body has lost the ability to keep blood sugar under control. The body struggles to manage large amounts of sugar and starch in the diet, so when sugary or starchy foods are eaten, blood sugar rises rapidly. This can cause harm to all the organs in the body.



It is important that we try to prevent and manage T2D. The higher blood sugar levels associated with diabetes damage the lining of large and small blood vessels, affecting the blood supply to vital organs. T2D is a leading cause of problems such as heart attacks, blindness, kidney disease, and amputations. A high blood glucose level also contributes to inflammation and it impairs the body's immune system, reducing the body's ability to repair and fight infection.



Understanding what causes T2D can help prevent and reverse the condition. T2D happens when the body's blood sugar control system has become over loaded. The onset of T2D does not just happen overnight, it happens over many years and is mainly due to the type and amount of food we eat. Whilst some medications and our genes can increase the chance of developing T2D, it is our lifestyle – and more specifically our diet – that has the greatest impact.

100 years ago T2D was rare. It probably affected less than 1 in 100 adults. Over the last few decades, T2D has become increasingly common. In the UK there are now at least 4 million people diagnosed with T2D. 1 in 10 adults over the age of 40 years have the condition and this number is rapidly increasing.

## Good news for type 2 diabetes

T2D was once thought to be a disease that would gradually get worse over time. You may have been told T2D was progressive, chronic, and irreversible. [We now have a better understanding of the condition and it is widely accepted that almost everyone can significantly improve their T2D.](#) People across the world are now reversing the condition, and even placing it into remission.

We now know T2D can be improved by simply reducing carbohydrate in the diet, the very foods that put blood sugar up in the first place. Everyone can improve their T2D to some degree and many can reverse it completely. Reversal of T2D means achieving a lower blood sugar level that is in the non-diabetic range without using medication. For people who are already on medication, reducing or completely stopping it is also a real possibility.



- T2D reversal means a lower long-term blood glucose (HbA1c) without an increase in diabetes medication.
- T2D remission means achieving and maintaining a blood glucose below the diabetes diagnosis level (HbA1c less than 48mmol/mol or 6.5%) and not needing diabetes medication.

### The benefits of T2D reversal include:

- Lower blood sugar
- Weight loss
- Belly fat loss
- Improved liver function
- Lower blood pressure
- Less diabetes medication
- Less risk of problems caused by diabetes such as heart attack, stroke, infections, eye disease, kidney disease, nerve problems



## I Options for reversing type 2 diabetes

There are three ways to reverse T2D. These are: bariatric (weight loss) surgery, a very low-calorie diet, or a low-carbohydrate diet. At Health Results we believe a low-carbohydrate diet is one of the simplest ways to improve type 2 diabetes, as well as being very safe. A low-carbohydrate diet is the option that is open to nearly everyone. It can be enjoyable and comes with very few or no side effects. It is also a sustainable diet that can be part of a happy and enjoyable lifestyle.



**Warning!** The improvement in blood glucose with a low-carbohydrate diet can happen quickly, so medication may need to be reduced or stopped straight away. If you take medication for your T2D, you must speak to an appropriate healthcare professional **before changing your diet.**

**Note:** Type 2 diabetes is very different from type 1 diabetes. Type 1 diabetes is not caused by lifestyle and although it can be significantly helped with diet, it cannot be reversed.

# What is type 2 diabetes?

## I Key facts:

- T2D is a condition of too much glucose (a type of sugar) in the blood and insulin resistance.
- The glucose in our blood comes directly from the food we eat and glucose is also made by our liver (gluconeogenesis).
- Insulin is a hormone, a type of messenger, made in our pancreas. When blood glucose rises, insulin is released into our blood and instructs the body to lower blood glucose.
- In T2D the blood glucose level is high because the liver is making too much glucose and the body is resisting the instruction from insulin (this is in part due to there being too much fat in the liver and pancreas). This means the body struggles to lower blood glucose after eating sugary or starchy foods.

## It is important for the body to keep tight control of blood glucose.

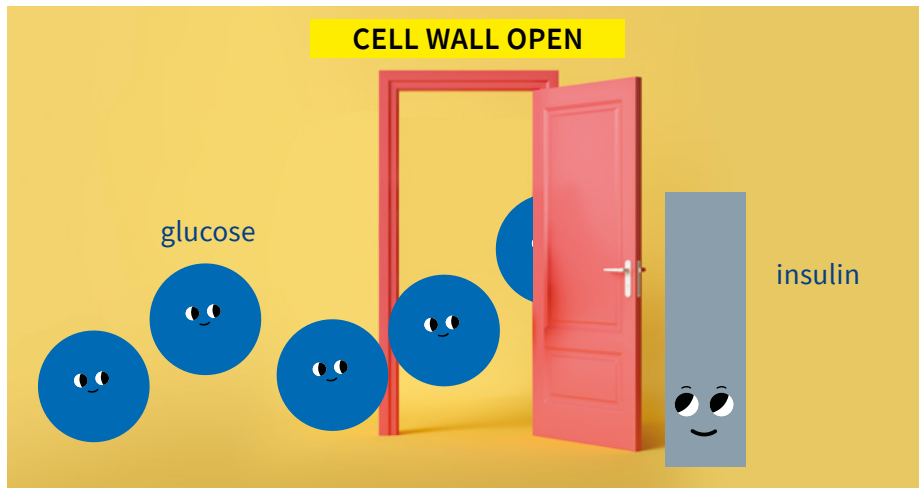
We should only have a tiny amount of glucose in our blood. Normal blood glucose is just 5g (approximately 1 teaspoon) of glucose in all 8 pints (or 5 litres) of our blood.



## I How does the body lower blood glucose?

To lower blood glucose the body uses a hormone, a type of messenger, called insulin.

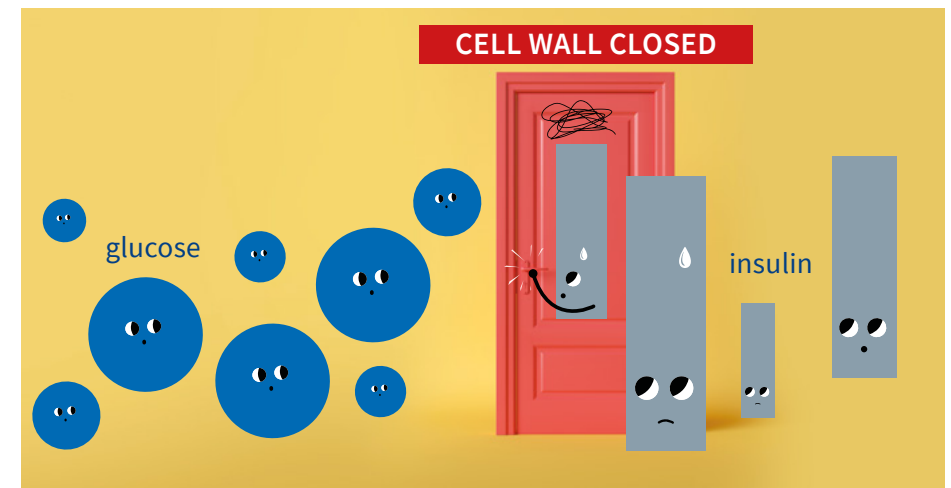
Insulin instructs many parts of the body to act to reduce the amount of glucose in the blood. Insulin instructs cells to 'open their doors' to allow glucose out of the blood and into the cells. Insulin also instructs the liver to stop making glucose.



## I What happens in type 2 diabetes?

In T2D the body loses its ability to respond to the insulin signal.

The body is resisting the glucose-lowering instruction from insulin, leading to the blood glucose level becoming too high. This is called insulin resistance.





## I How does the food we eat affect our blood glucose?

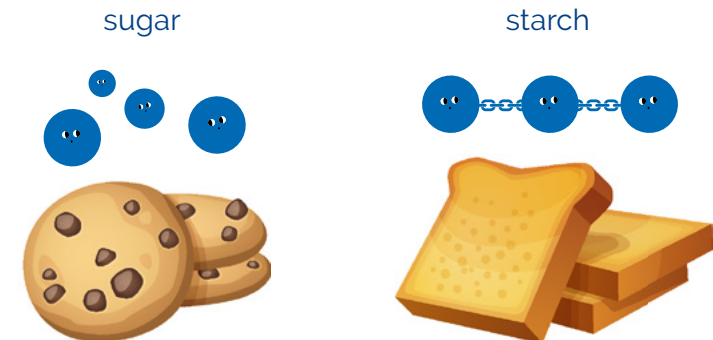
### Foods we eat can have a significant impact on our blood glucose.

There are three main food groups that provide energy in our diet. These are known as macronutrients. They are fat, protein, and carbohydrate. It is the carbohydrate that has the greatest impact on raising our blood glucose.



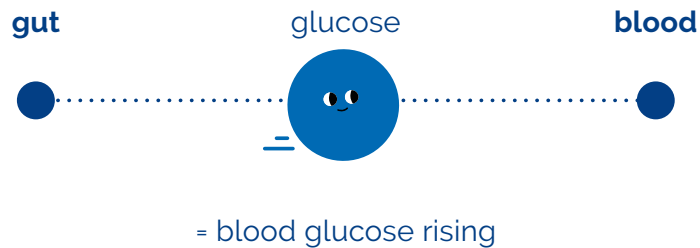
### Carbohydrates are sugars and starch.

- Most sugars contain glucose.
- Starch, which is found in plants, is simply long chains of glucose molecules joined together. When we eat foods containing starch, our digestive system breaks the starch back down into glucose.



Whether the glucose in our diet comes from sugar or starch, once digested it all ends up going into our blood.

As the glucose enters our blood it causes our blood glucose to rise.



The more sugar and starch there is in our diet, the more glucose there is going into our blood. More glucose going into our blood means more insulin is needed to get the glucose out of the blood and into the body's cells.

## I A brief mention of the sugar called fructose

It is worth mentioning fructose, another type of sugar. Fructose is found in table sugar, in fruit, and in the manmade sugar called high-fructose corn syrup. Fructose does not lead to a rapid rise in blood glucose. **HOWEVER**, fructose does play a significant role in causing insulin resistance in the first place. It can contribute to fat accumulation in the liver (non-alcoholic fatty liver disease) and should not be seen as a safe alternative to glucose.



## I How much glucose do foods contain?

Dr David Unwin, a GP in the north of England, has created some simple infographics to help people understand how different foods will impact on blood glucose.

The infographics on the following pages list many different foods and compare the impact they have on blood glucose to equivalent teaspoons of table sugar. For example, a ripe standard-sized banana has a similar impact on blood glucose as eating almost 6 teaspoons of table sugar.



**Dr David Unwin**  
GP

“I came up with my ‘teaspoon of sugar infographics’ to give you a better idea of how various foods might affect your blood sugar. I rather hope you will then replace the worst offenders with less ‘sugary’ foods and, like so many people round the world, achieve better health as a result!”

Breakfast Cereals			
The Glycaemic Index helps predict how these breakfasts might affect blood glucose (important information if you have type 2 diabetes)			
Cereal	Glycaemic Index	Serve Size	How each cereal affects blood glucose compared to 4g teaspoons of table sugar
Coco Pops	77	30g	7.3
Cornflakes	93	30g	8.4
Mini Wheats	59	30g	4.4
Shredded Wheat	67	30g	4.8
Special K	54	30g	4.0
Bran Flakes	74	30g	3.7
Oat Porridge	63	150ml	4.4

\*As per calculations to be found in: It is the glycaemic response to, not the carbohydrate content of food that matters in diabetes and obesity: The glycaemic index revisited | Unwin | Journal of Insulin Resistance 2016 | @lowcarbGP

## Bread

The Glycaemic Index helps predict how these bread types might affect blood glucose (**important information if you have type 2 diabetes**)

Type of bread	GI from scientific literature	Serve Size (g)	Glycaemic load (g/serve)	How each bread affects blood glucose compared to 4g teaspoons of table sugar
<b>White</b>	71	30g	10	3.7 🍷
<b>Brown</b>	74	30g	9	3.3 🍷
<b>Rye</b> 69% whole-grain rye flour	78	30g	11	4.0 🍷
<b>Wholegrain barley</b> 50% barley	85	30g	15	5.5 🍷
<b>Wholemeal</b> stoneground flour	59	30g	7	2.6 🍷
<b>Pitta</b> wholemeal	56	30g	8	2.9 🍷
<b>Oatmeal batch</b>	62	150ml	9	3.4 🍷

\*As per calculations to be found in: It is the glycaemic response to, not the carbohydrate content of food that matters in diabetes and obesity; The glycaemic index revisited | Unwin | *Journal of Insulin Resistance* 2016 | @lowcarbGp

## Fruit & Vegetables

Use the glycaemic index to predict how fruit & veg affect blood glucose

Food item	Glycaemic index	Serving Size (g)	How each food affects blood glucose compared to one 4g teaspoon of table sugar
<b>Potato, boiled</b>	96	150g	9.1 🍷
<b>Sweetcorn</b>	60	80g	4.0 🍷
<b>Frozen peas</b>	51	80g	1.3 🍷
<b>Cabbage</b>	10	80g	0.1 🍷 Also salad leaves, broccoli, courgette, cauliflower...
<b>Raisins</b>	64	60g	10.3 🍷
<b>Banana</b>	62	120g	5.7 🍷
<b>Apple</b>	39	120g	2.3 🍷
<b>Strawberry</b>	40	120g	1.4 🍷

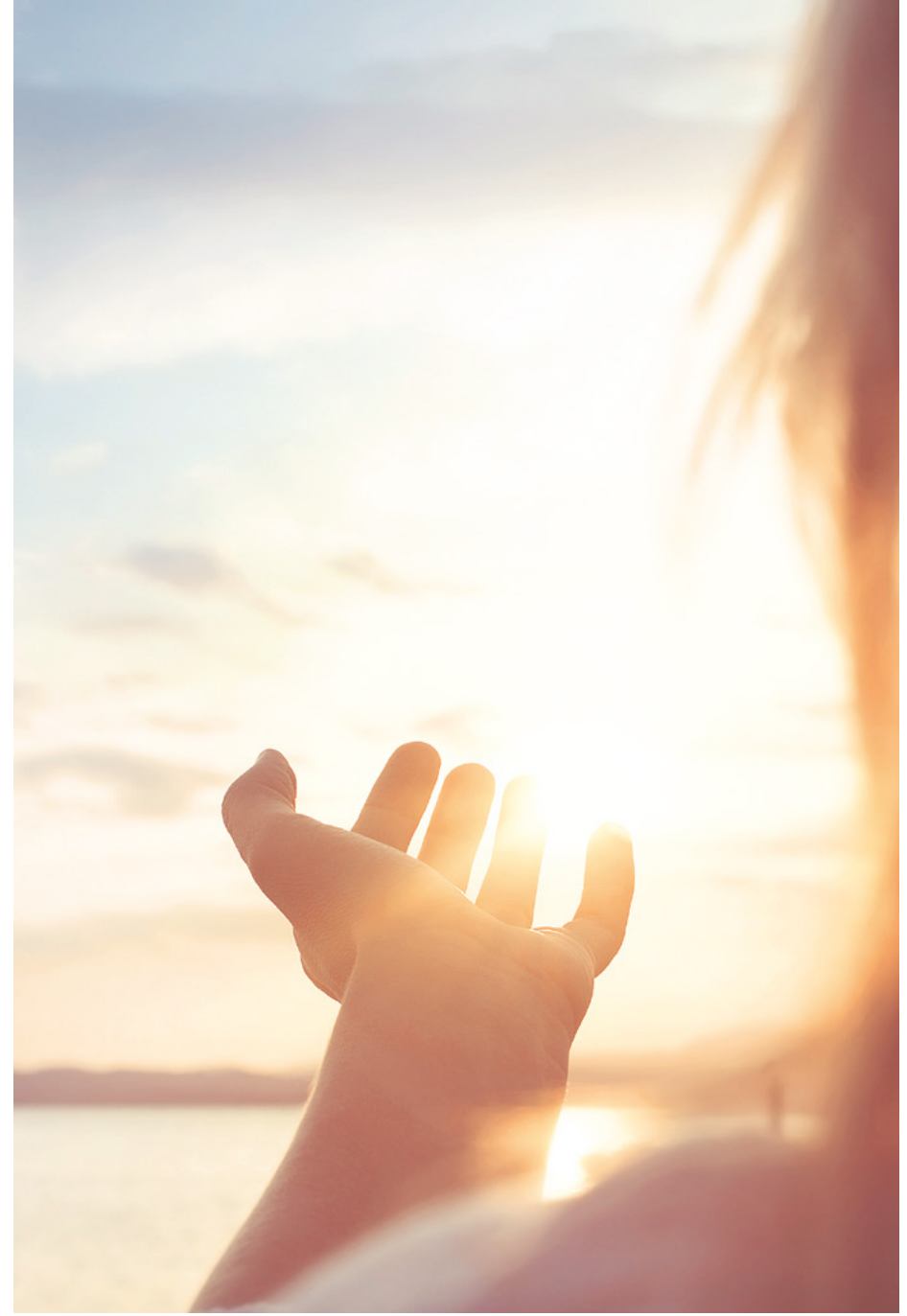
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## Sugar Burden

Three different sources of sugars that make up our total dietary 'sugar burden'; shown as 4g teaspoon of table sugar equivalents\*

1 Naturally occurring sugars	2 Foods with added sugars	3 Foods digested down into sugars
<b>Banana</b> 4.9 teaspoons/100g	<b>Chocolate rice crispies</b> 24.4 teaspoons/100g	<b>Brown bread</b> 10.8 teaspoons/100g
<b>Honey</b> 17.6 teaspoons/100g	<b>Fizzy orange</b> (1/3 can) 1 teaspoon/100ml	<b>Boiled spaghetti</b> 3.7 teaspoons/100g
<b>Skimmed milk</b> 0.9 teaspoons/100ml	<b>Digestive biscuits</b> 8.8 teaspoons/100g	<b>French fries</b> 5.1 teaspoons/100g
<b>Raisins</b> 17.1 teaspoons/100g	<b>Malt loaf</b> 14.7 teaspoons/100g	<b>Basmati rice</b> 6.8 teaspoons/100g
<b>Apple juice</b> 4.3 teaspoons/100ml	<b>Raspberry yogurt</b> 2.4 teaspoons/100g	<b>Baked potato</b> 6.3 teaspoons/100g

\*As each food would affect blood glucose, from the international tables of glycaemic load (Atkinson, Foster-Powell et al. 2008) as per the calculations to be found in: It is the glycaemic response to, not the carbohydrate content of food that matters in diabetes and obesity. The glycaemic index revisited | Unwin | *Journal of Insulin Resistance* 2016



## I Where does the glucose go after we eat it?

There are **three** ways that our body uses glucose:



1

### Immediately used for energy

Only a relatively small amount of glucose can be used at any one time in the body. The rest needs to be stored.

2

### Stored in our muscles and in our liver as glycogen

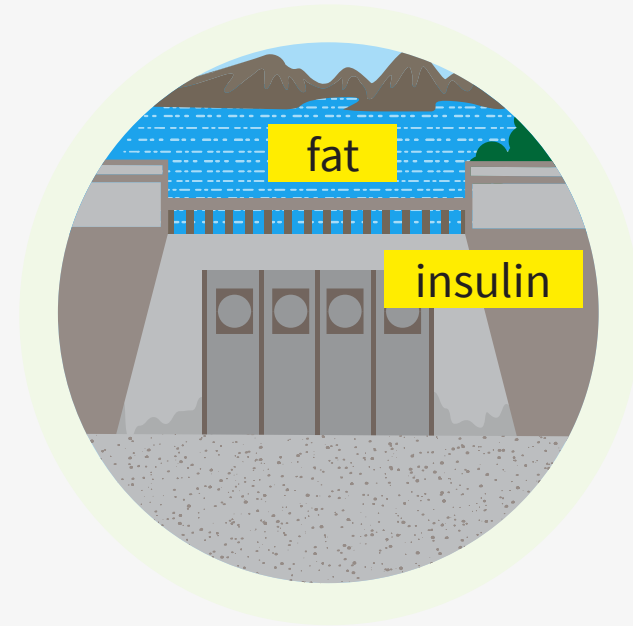
Glycogen is long chains of glucose joined together, a bit like the body's equivalent to starch. There is limited glycogen storage space in the body.

3

### Stored as fat

The final option for the body is to turn excess glucose into fat. Our liver and fat tissues play a key role in doing this. The creation of fat is one of the reasons why people who eat a lot of sugar and starch can develop a fatty liver, excess body fat, and weight gain.

Insulin promotes all three of these processes. Insulin drives the burning and storage of glucose and the creation and storage of fat.



### Insulin also prevents the burning of fat in the body.

This makes sense, as the body does not want to burn fat when there is already too much glucose to deal with. Therefore insulin, in addition to being a blood glucose-lowering hormone, should also be thought of as a fat-storage hormone. When the body is in this state it also means that any excess fat we eat will be more likely to be stored rather than used for energy.

It's important to note that glucose in our blood does not just come from our food. Our liver also makes glucose. In fact, if we are eating enough fat and protein, our liver can actually make all the glucose we need. And unfortunately, in T2D the liver is making too much glucose.

## I When the body becomes 'over-stuffed'

When we eat a diet that is high in sugar and starch, day after day, year after year, the body can become over-stuffed.

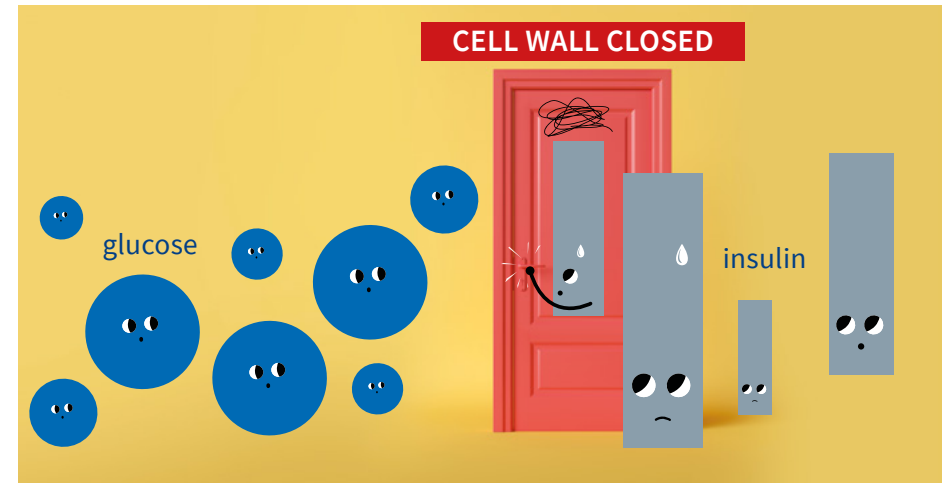
The constant challenge of getting excess glucose out of the blood and into the body's cells eventually reaches its limit. When the cells become over-stuffed with glucose and fat, there is no more room for them to take in any more glucose.

You could think of this a bit like going on frequent clothes shopping trips. All the new clothes eventually fill the bedroom wardrobes. The wardrobes become over-stuffed. Now, any new clothes that arrive in the home will have to be piled up on the floor, steadily filling the bedroom, just like glucose builds up in the blood in T2D.



## What happens when the body has become over-stuffed?

Even if a huge amount of insulin is being released by the pancreas and the insulin is loudly knocking at a cell's front door, demanding it to open, the cell simply does not respond. The cell is resisting the instruction from insulin.



**An over-stuffed body and a high insulin level causes people to experience a range of unpleasant symptoms:**

- Excess belly fat, weight gain, and great difficulty in losing weight
- Frequent or constant hunger (this is due to the blood sugar being on a rollercoaster ride and the high insulin level driving fat storage and preventing the body from burning fat for energy)
- Feeling sluggish and tired all the time
- Feeling fed up
- Brain fog
- Skin problems such as skin tags and acanthosis nigricans (pigmentation in the neck, armpits, and groin)
- Increased blood pressure (this is in part due to the high insulin causing the kidneys to keep too much sodium (salt) in the blood)
- Acid reflux
- Increased respiratory infections, skin infections, joint pains, and slower healing



As you can imagine, these problems are telling us something is going wrong. Simply put, the body is at war with itself. Every part of the body is fighting to defend itself from more glucose being forced into cells. A body in this situation is not happy and eventually it cannot take any more. At this point blood glucose becomes raised and now we have T2D.



The problem begins long before T2D happens. The years of excess sugar and starch is a bumpy and unpleasant journey. The rise in blood glucose that happens as T2D develops is just the final step. When people with T2D discover these facts they at last understand why they have felt so unwell for so long.



## I How is type 2 diabetes treated?

The way T2D is treated has changed a lot over the last century. As far back as 1894, the advice for managing diabetes was to remove sugar and starch from the diet.

In the 1800s they did not know about the differences between type 1 and type 2 diabetes. They simply knew that diabetes caused sugar to appear in the urine.

This is the actual extract from the *Manual of Nursing, Medical and Surgical* by Dr Laurence Humphry, published in London in 1894.

**Management.—Diet** is the first and chief point to be attended to, and it is necessary to exclude all saccharine and starchy material which accentuate the symptoms and keep up the activity of the disease. Almost all kinds of animal food, flesh, fish, and fowl, may be consumed by the diabetic, but the cooking should be carefully supervised, and the cook informed upon every point in the serving up of made dishes, soups, &c. Soups must not be thickened by farinaceous matter, joints basted with flour, or jellies sweetened with sugar or syrup. Many vegetables are obnoxious, potatoes in particular, but many green vegetables may be allowed. Bread is injurious, and is the most difficult article of every day food for which to find an efficient and palatable substitute. Milk agrees well with many diabetics, but contains sugar of milk, so that large quantities may prove harmful.

This dietary approach of reducing sugar and starch makes sense. Eating sugary and starchy foods cause the blood glucose level to rise. Minimising or avoiding sugar and starch allows blood glucose to drop.

Treating diabetes by minimising sugar and starch in the diet continued until the 1970s. Then, a change happened that would send the treatment of the condition in the wrong direction for the next 50 years. Instead of advising that carbohydrate should be reduced, doctors, nurses, and dietitians started to tell patients to eat mainly starchy foods at every meal, to eat regularly to keep blood glucose up, and to reduce fat intake. In short, patients with high blood glucose were told to eat a low-fat, high-carbohydrate diet. This shift in dietary recommendation led to increased focus on eating sugary and refined carbohydrate foods, such as breakfast cereals, pasta, and bread. **This high-carbohydrate and highly-processed food diet invariably led to patients' blood glucose worsening over time. As blood glucose worsened, doctors would increase diabetes medication to try to drive the blood glucose back down.**




This high-carbohydrate dietary advice, that was even promoted by diabetes charities, continued up until about 10 years ago. Here is an extract from a information leaflet for people with type 2 diabetes, published by a diabetes charity in 2011:

**Ten steps to eating well**

**1** Eat three meals a day. Avoid skipping meals and space out your breakfast, lunch and evening meal over the day. This will not only help control your appetite but will also help control your blood glucose levels.

**2** At each meal include starchy carbohydrate foods such as rice, chapatis, bread, pasta and breakfast cereals. The amount of carbohydrate you eat is important to control your blood glucose levels. Especially try to include those that are more slowly absorbed (have a lower glycaemic index) as these won't affect your blood glucose levels as much. Better choices include: basmati or easy cook rice, grainy breads such as granary, pumpernickel and rye, chapatis made with millet or chickpea flour, pasta, porridge oats, All-Bran and natural muesli. The high fibre varieties of starchy foods will also help to maintain the health of your digestive system and prevent problems such as constipation.



Unfortunately for people with T2D, the shift in dietary advice – to eat more carbohydrate and take more drugs – led to a worsening of their T2D and health. With this, doctors incorrectly came to see T2D as a chronic and progressive disease. This meant they considered T2D to be a disease that just got worse over time.

To make matters worse, patients were told they had T2D because they ate too many calories and did not exercise enough, and they should eat less and move more. This in effect meant doctors were telling their patients they had T2D because they were greedy and lazy. Then, as the patient followed the high-carbohydrate dietary advice and their T2D became worse, they were blamed. The medical treatment of T2D had become an upsetting game of increasing medication as the patient became sicker.

It is possible this dietary advice and approach to T2D has contributed to the explosion of the disease and its consequences around the world. There are now over 422 million people in the world with diabetes and the majority of this is T2D.



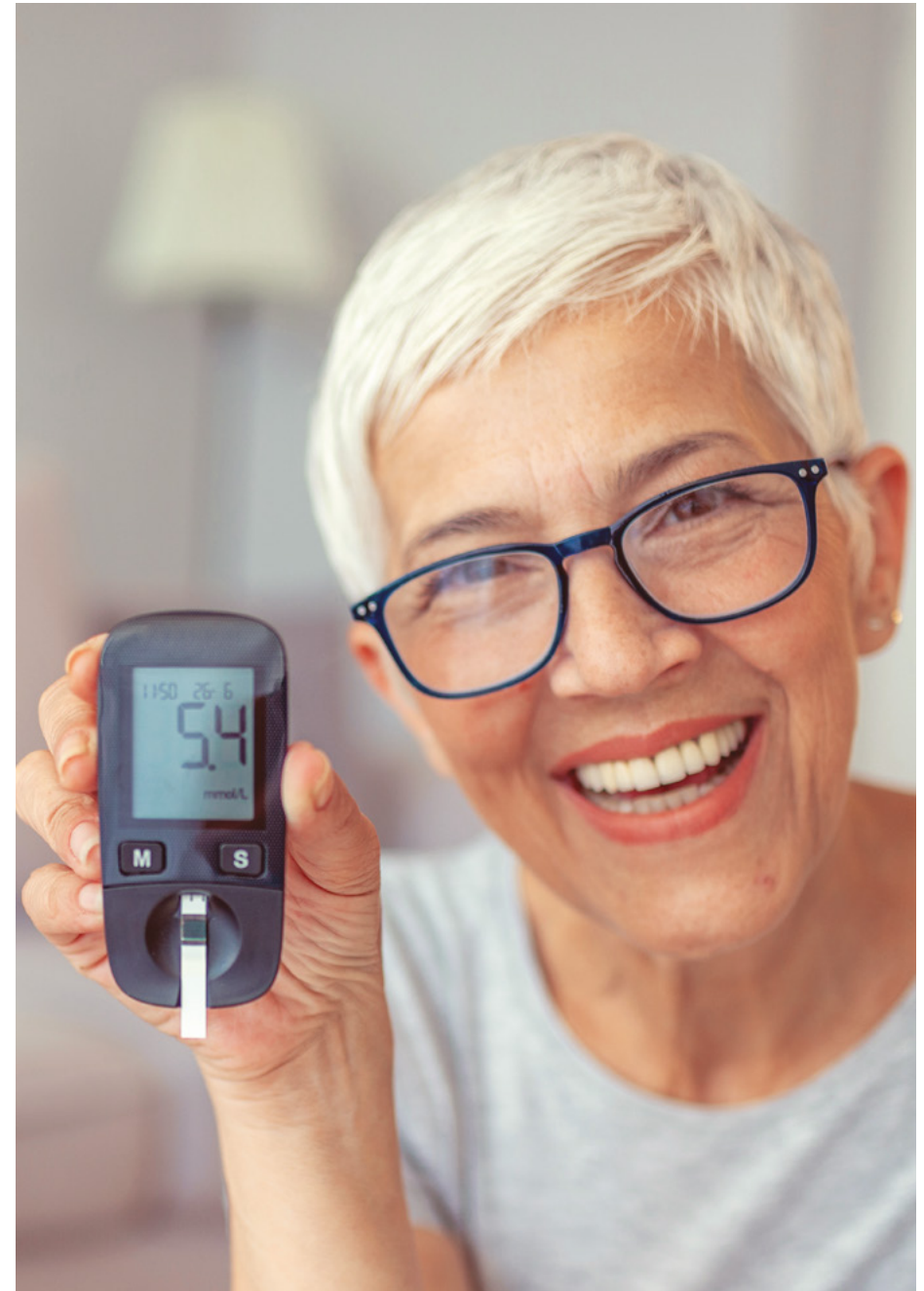
## I Back to the future for type 2 diabetes

Fortunately, over the past 10 years there has been another shift in thinking of how to best manage T2D. People with T2D and their doctors, nurses, and dietitians, are relearning that T2D does not have to be a chronic progressive disease that only gets worse. We now know that T2D can be reversed. By re-adopting the 1894 dietary recommendations of reduced carbohydrate in the diet, many people find their T2D improves. Blood glucose improves in nearly all patients who reduce the amount of carbohydrate in their diet. Many people with T2D can reduce and some can completely stop their diabetes medication.

With the removal of excessive dietary sugar and starch, the body stops being at war with itself. The whole body becomes healthier. Blood pressure often improves. Weight and belly fat is lost. People often find they have more energy and are no longer hungry all the time. Many people experience a feeling of hope that they can regain their health.

The term we now use to describe a diet of reduced sugar and starch, that reverses T2D, is a low-carbohydrate diet. It is a diet that is lower in carbohydrate compared to the high-sugar, high-starch diet of the last 50 years.

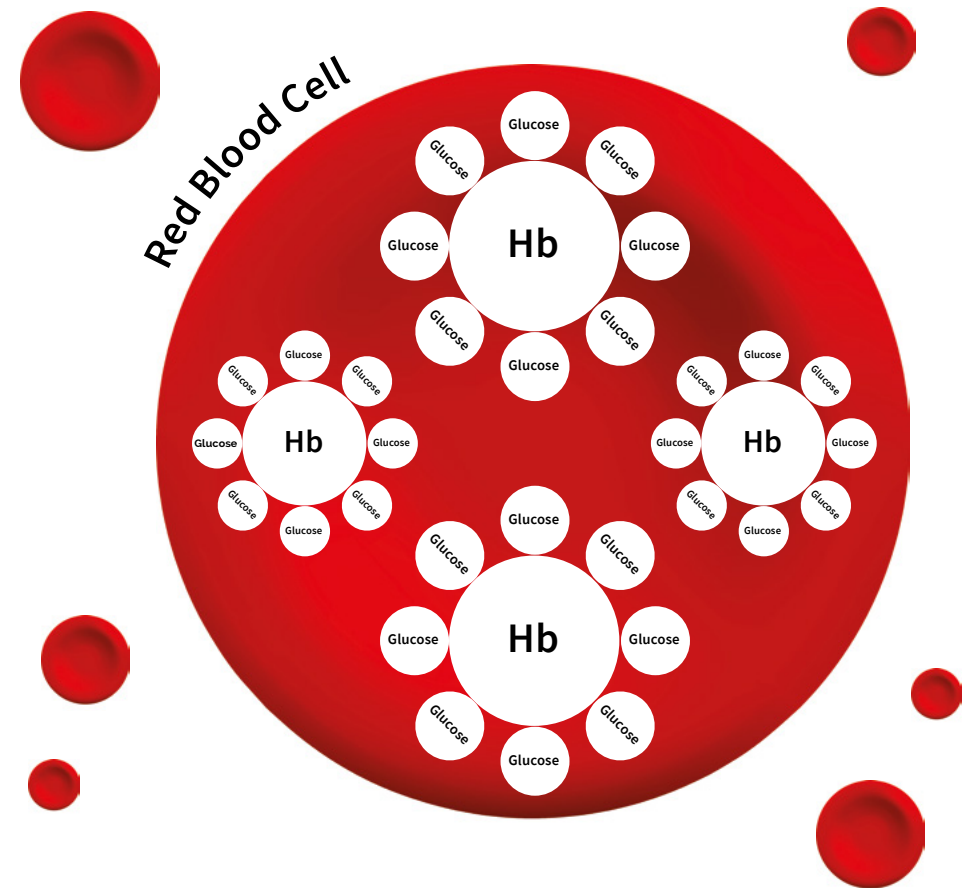
A low-carbohydrate diet makes sense. It is a wonder it took so long for us all to reawaken to its benefits.



## How is blood glucose monitored?

To determine if any treatment, medication, or change in diet is effective we must understand how to monitor the level of glucose in the blood. Blood glucose assessment can be done at any time of the day with a simple finger prick sample, or a continuous glucose monitoring device. Blood glucose can also be assessed with a blood test called HbA1c. HbA1c provides an indication of the average blood glucose level over the previous three months, or in simple terms how 'sugary' you have been.

HbA1c is a measurement of glucose that is attached to haemoglobin in our red blood cells. The more glucose there is in our blood, the more glucose will attach to haemoglobin. Once the glucose is attached to the haemoglobin, it stays attached. Red blood cells and haemoglobin have a three month lifespan in our blood. Therefore, HbA1c gives a measure of our average blood glucose over the previous three months.



# I Blood glucose and HbA1c ranges

This table shows the ranges of blood glucose and HbA1c. Fasting blood glucose is measured when someone has not eaten for 8 to 10 hours.

	Normal	Prediabetes	Type 2 diabetes
<b>Fasting blood glucose level (mmol/l)</b>	Less than 5.6	5.6 to 6.9	7 or more
<b>HbA1c (mmol/mol)</b>	Less than 42	42 to 47	48 or more
<b>HbA1c (%)</b>	Less than 6	6 to 6.4	6.5 or more



## I How do we measure our blood glucose?



### Blood Glucose Meter

Measurement of blood glucose from a small finger prick sample can provide rapid feedback on how food affects your blood glucose level. For example, testing blood glucose before and then again two hours after eating will show how much the food causes glucose to rise. You can compare the effect of different foods. Foods that are mainly protein, fats, and non-starchy carbohydrates - such as an omelette or a piece of fish, or green salad - will cause little or no blood glucose rise. Whereas, sugary and starchy foods will often cause a significant rise in blood glucose level. This is why a low-carbohydrate diet makes sense for T2D.



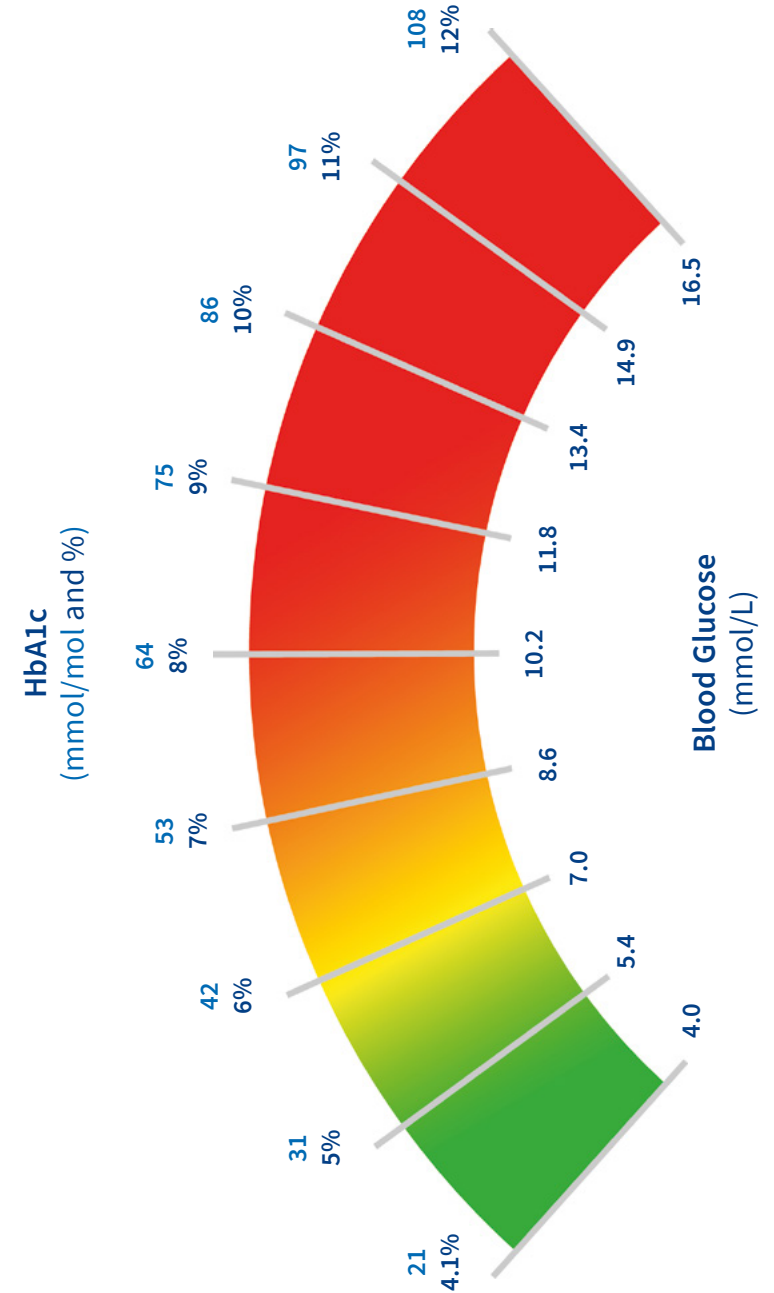
### Continuous Glucose Monitor

Devices that continuously monitor glucose levels (CGMs) are also available. These are particularly useful for providing frequent analysis of glucose and giving detailed, rapid feedback on the impact of your diet. These devices do not directly measure blood glucose; they measure the glucose in the fluid in the skin which lags about 20 minutes behind blood glucose. The frequency of glucose readings that CGMs provide can be very beneficial to support behaviour change. CGMs are more expensive than basic glucose meters and they are not currently provided by the NHS for people with type 2 diabetes.

## I Predicting HbA1c from blood glucose readings

People with type 2 diabetes typically have a blood test to **measure their HbA1c every three to six months**. This is a long time to wait to assess the impact of lifestyle and dietary change. It is possible to use frequent finger prick blood glucose measurements to predict the HbA1c level. Continuous glucose monitors use this same method to provide users with a predicted HbA1c.

The chart below shows how blood glucose correlates with the HbA1c level. For example, if a person's blood glucose was usually 7.0 then their predicted HbA1c would be approximately 42mmol/mol (or 6%).



## I Who is a low-carbohydrate diet for?

A **low-carbohydrate diet is not new**. It is a diet that humans would have eaten throughout our history. But, over the past 50 years, the diet eaten by many people has become much higher in sugars and refined carbohydrates.

A low-carbohydrate diet is low in carbohydrate compared to the modern processed food diet. A low-carbohydrate diet consists of mainly whole, or real, foods. These are natural foods that have not been manufactured on a production line. Real foods rarely need a food label and they would have been recognised by our ancestors 100,000 years ago.

A low-carbohydrate diet is effectively the natural human diet and whilst suitable for almost everyone, it is particularly suitable for most people with T2D.





## I Who is a low-carbohydrate diet not suitable for?

There are a small number of people for whom a low-carbohydrate diet is not suitable:

- People with rare genetic conditions that prevent the efficient use of fat for energy
- People with a rare condition called acute porphyria
- Recent or current severe illness that would make dietary change inappropriate
- Recent unexpected weight loss (this needs to be investigated before changing diet)
- People currently experiencing any type of eating disorder, especially if without support from appropriate eating disorder specialist healthcare professionals

There are also some people where greater caution and more support from healthcare professionals may be needed:

- People with a previous eating disorder where a change in diet may need greater psychological or social support
- During pregnancy, any planned significant change in diet should be discussed with your healthcare team first

## I What precautions are needed with medication?

People on certain medications will need support from a trained healthcare professional to ensure medication dosing is adapted appropriately. [The medications that commonly need to be considered are: diabetes medications, blood pressure medication, and warfarin.](#)

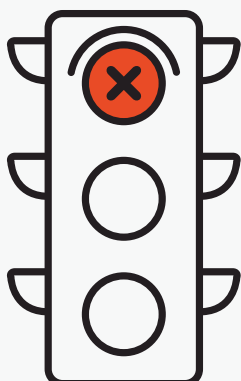
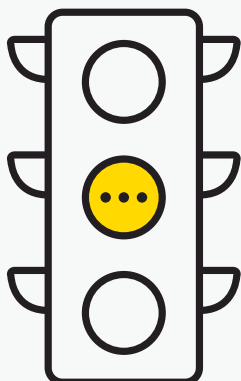
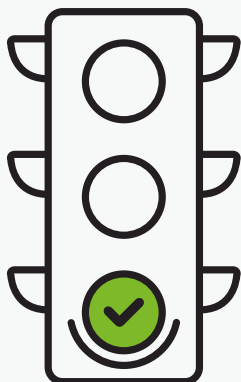
Important information for healthcare professionals

### Adjusting diabetes medication

Appropriately and safely adjusting medication by a healthcare professional is essential. To support healthcare professionals with this, an article was published in the *British Journal of General Practice* in 2019. The full article 'Adapting diabetes medication for low-carbohydrate management of type 2 diabetes: a practical guide' can be found here [British Journal of General Practice\\*](#) (some of the authors of the article were also involved in creating this book).

The two most serious risks with diabetes medication are:

- Low blood sugar which can be caused by insulin and sulfonylureas
- A very dangerous condition called ketoacidosis caused by SGLT2 inhibitors (commonly called flozins, drugs that increase the amount of glucose passed out in urine). Although ketoacidosis is rare, it can be fatal. People who take flozins should discuss these medications with a healthcare professional before moving to a low-carbohydrate diet. They are usually reduced or stopped when a low-carbohydrate diet is started



## What can you eat on a low-carbohydrate diet?

The general principles for a low-carbohydrate diet are very simple:

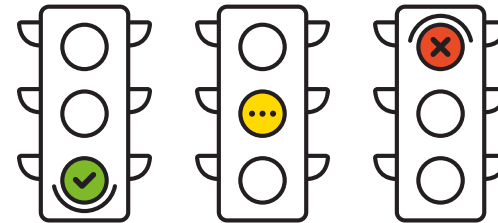
- Enjoy as many non-starchy vegetables as you like. These are vegetables that typically grow above the ground.
- Likewise, enjoy as many whole foods containing protein and fat as you like such as meat, fish, eggs, and nuts. Some people may need to reduce their fat intake if they are not achieving their weight goals.
- Minimise, or completely avoid, sugary and refined carbohydrate foods.
- Aim for less than 130g of carbohydrate a day. Some people will see best results by reducing this to 70g per day or less.
- Minimise vegetable oils. Although these are not carbohydrate there is some evidence their high Omega-6 content could have an adverse effect on health, and they are typically only found in processed foods or used in cooking. Cooking with vegetable oils is not a good idea as they oxidise easily. For cooking, olive oil, coconut oil, butter or other animal fats may be better (this is because they are less prone to degrading, or oxidising, when heated)

The Health Results Low-Carbohydrate Diet Traffic Light System can be used as a simple guide to support your choices. You can download a printable version of the Low-Carbohydrate Diet Traffic Light System at [www.HealthResults.com/pages/food](http://www.HealthResults.com/pages/food)

# Low-Carbohydrate Diet Traffic Light System

Making it simple to personalise  
a low-carbohydrate diet

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Use the traffic light system in this resource to follow a low-carbohydrate diet. The majority of the food you eat should come from the green lists. These foods are lower in carbohydrate.

The protein and fat content of foods are also included. Use this information to personalise your food choices for your specific needs.

In this resource:

**Sheet 1:** Foods that are higher in protein and/or fat

**Sheet 2:** Foods that are low or very low in protein and/or fat

## I Sheet 1: Foods that are higher in protein and/or fat

Eat mostly from the green lists to keep carbohydrate intake low. With a low-carbohydrate diet, most people can eat as much protein as they like. Some people may need to limit their fat intake to achieve their weight loss goals (see triangles).

Enjoy			
Higher protein content	Egg white		
	Non-oily fish	Crab (white meat)	King prawns
	Shrimps	Scallops	Venison
	Standard prawns	Squid	Tripe
	Lobster	Chicken & turkey (light meat)	Quorn
	Shell fish		
	Mussels	Chicken & turkey (dark meat)	Liver
	Ham	Rabbit	Heart
	Lean beef	Kidney	
	Lean pork		
Higher fat content	Gammon	Beef steak	Pheasant
	Back bacon (fat trimmed)	Pork	
		Poultry with skin	
	Whole eggs	Crab (brown meat)	Duck
	Half fat cheddar	Ham, gammon	Oxtail
	Oily fish	Lamb	
	△ Cheese	△ Fatty cuts meat	
	△ Bacon	△ Tongue	
	△ Most nuts	△ Pate	
	△ Cream	△ Sour cream	
△ Crème fraîche	△ Olives		
△ Fats	△ Lard	△ Olive oil	
△ Butter	△ Dripping	△ (Avoid vegetable oils)	

△ If weight loss is desired some people may need to reduce these foods

Enjoy some			
Higher protein content	Tofu		
	Soya		
Higher fat content	△ Greek yogurt (plain)	△ Pumpkin seeds	△ Cashew nuts
	△ Houmous	△ Melon seeds	△ Pistachio nuts
	△ Avocado	△ Sunflower seeds	
		△ Peanuts	
	△ Coconut		

Enjoy in smaller amounts		
<b>Legumes</b>	Lentils Chickpeas Green Peas	Beans (aduki, mung, pinto, blackeye, haricot, red kidney)
<b>Dairy and alternatives:</b>	Quark Fromage frais Yoghurt	Cow's milk Soya milk
Dark chocolate (80% or greater cocoa)		



# Low-carbohydrate problems and solutions

Whilst a low-carbohydrate diet can rapidly improve blood glucose there can be some 'side effects' especially in the first couple of weeks. Knowing what to expect can help ensure you have a successful journey.



## I Fatigue during the first 1-2 weeks

Fatigue seems to affect approximately 50% of people when they reduce their carbohydrate. This temporary fatigue tends to last 1-2 weeks. The reason for the initial fatigue is the time delay it takes for the body to become efficient at burning fat. Following this period, most people report they have more energy than before the dietary change.

### Solution:

- Reduce the expectations on yourself for the first couple of weeks
- Realise this is a normal, short phase and the fatigue will pass
- Ease back on exercise



## I Constipation

Any change in diet can lead to a change in bowel habit. The most common experience when moving to a low-carbohydrate diet is constipation. This is probably due to a tendency to pass more urine in the first few days, causing potential mild dehydration and harder stool. Any constipation may also be due to changing the gut bacteria as well as electrolytes in the blood. If constipation occurs it usually resolves after 1-3 weeks.

Additionally, some people find irritable bowel syndrome (IBS) symptoms they have had for years improve with a low-carbohydrate diet. (This is probably due to the reduced sugar and refined carbohydrate in their diet, or being able to come off the medication metformin.)

### Solution:

- Ensure you drink enough water
- A magnesium dietary supplement is often helpful
- Over-the-counter laxatives may occasionally be needed for 1-2 weeks
- Expect the constipation to resolve within 3 weeks.

**(Important: if any bowel problem continues for 6 weeks, then make sure you speak to your doctor. There are some rare and serious causes for alteration in bowel habit which are not related to the dietary change.)**



## I Headache

A small number of people experience a mild headache with the dietary change. This should only last a few days. This headache may be due to a reduction in sugar in the diet.

### Solution:

- Know it will pass
- A little extra salt may help



## I Light-headedness

A low-carbohydrate diet can lead to an improvement in blood pressure. This can be especially rapid in the first few days of the diet when more urine may be created.

### Solution:

- Ensure you are drinking adequately
- Add a pinch of extra salt to your food
- Check your blood pressure and review any blood pressure medication with a doctor or nurse
- Ease back on the exercise



## I Muscle cramps

Muscle cramp is quite common, especially in the legs. It is thought muscle cramps are due to a change in the sodium, potassium, magnesium, and calcium levels in the blood and muscle when a low-carbohydrate diet is commenced.

### Solution:

- A daily over-the-counter magnesium supplement (e.g. magnesium citrate, magnesium glycinate, or magnesium bisglycinate) seems to be highly effective in relieving cramp, often within a couple of days
- A little extra salt may help

**(Important: There are other causes for leg cramp that are unrelated to the dietary change. Symptoms that occur during or after exercise, or with a sudden change in leg temperature or colour, will not be due to the dietary change. In these cases urgent medical attention should be sought)**



## I Sugar and carb cravings

The potentially moreish and addictive nature of sugar and refined carbohydrates should not be underestimated. Equally, changing a lifetime of dietary habits can require determination, especially when we are often surrounded by sugary and processed foods.

### Solution:

- Expect to have cravings and prepare for them
- Realise this is normal, rather than assuming this lifestyle isn't for you
- Do not blame yourself, we are wired to crave these foods
- Where possible, create an environment that works for you
- It is easier to reduce cravings when a full biscuit tin is not calling you. Put it out of sight or get rid of it altogether
- Shops and takeaways can also cause cravings, so consider changing walking routes or shopping habits. Know that with time cravings do reduce, often within a few weeks. People experience more freedom from cravings within 2-3 months. Know what is most important to you and let this drive your low-carbohydrate journey





## I Frequently hungry

As people adapt to a low-carbohydrate diet, they usually experience less hunger, sharing comments such as 'I forgot to eat lunch'. For some people, it is the first time in years they have not had to battle constant hunger. However, occasionally people find they are hungrier.

### Solution:

- Use the Health Results Food Lists to increase the amount of protein and fat in the diet

## I Not losing weight (if this is your aim)

Most people with type 2 diabetes effortlessly lose weight and belly fat within the first few weeks of dietary change, and this weight loss continues until they reach their ideal weight. A weight loss of 0.5-2kg a week is typical, with some people losing 3-4kg in the first week. Generally, a greater weight loss in week one is partly due to some water loss.

However, some people find they do not achieve their desired weight loss.

### Solution:

- Everyone is different, so make sure you look at your specific situation
- Reduce carbohydrate further. A common cause is carbohydrate intake still being too high
- Alternatively, whilst some people can happily eat a diet higher in natural fats and achieve their goals, other people may need to reduce their fat intake. Some people tend to do better by eating higher protein and lower fat foods, which typically means eating more fish and lean meats, and less cheese and nuts, and minimising added fats such as butter and cream
- Reduce milk intake. Drinking milk can provide quite a lot of carbohydrate. The amount of milk can add up throughout the day, even from multiple cups of tea
- Review alcohol intake. Alcohol can block the body from burning fat and cause food cravings
- Review non-dietary factors. Inadequate sleep, stress, and hormones can all play a role

**Review your personal situation. Keep an accurate diary of what you are eating, and take regular blood glucose readings. Reflect on this information and then try making some adjustments.**

# What about exercise, sleep, and stress?

A low-carbohydrate diet is the key to success for reversing type 2 diabetes. Improving other lifestyle aspects can be beneficial for physical and psychological health.

## I Movement

At Health Results we recommend the **MARS approach**. This is summarised as:

- Move More** Move around in some way for 1-2 minutes, at least hourly.
- Aerobic** Enjoy some activity throughout the week that makes you moderately breathless, such as a brisk walk.
- Resistance** Challenge your big muscles (arms, legs, buttocks) once or twice a week. This could be some planned exercise, or could be part of your life such as heavier gardening, or even housework.
- Stance** Look after your posture when you are standing or sitting. Challenge and develop your balance with activities such as yoga.

## I Sleep

Most adults should aim to allow for 7 to 9 hours of sleep a night. Sleep can make a significant difference to blood glucose control and type 2 diabetes. Prioritise sleep, but do not worry about it.

## I Mind

Chronic stress can have a direct impact on blood glucose control. Stress can also make us crave sugary foods. Stress can be reduced by having a meaningful purpose in your life. Many people find a low-carbohydrate diet helps to reduce stress. Reversing type 2 diabetes, knowing why it matters, and noticing the results of the low-carbohydrate diet places you in control of your life.

## The secret to success

### We hope this book has been helpful.

Dietary change is of course the key to improving T2D with a low-carbohydrate diet. However, many factors play into this and everyone's T2D reversal journey will be different.



### I The factors that contribute to your journey:

1. Your personal goals and reasons for change. The more important your reasons, the greater the chance of success.
2. Your body's physiology (how your body is working).
3. Your food and lifestyle preferences.
4. Other personal health conditions and medications.
5. The world you live in: what food is available? Will your environment help or hijack you?
6. Will the people that are around you support you?
7. Your mood, mindset, and mental health.
8. The practical tools and resources you have.
9. The support of trusted healthcare professionals and health coaches.
10. Your food budget (a low-carbohydrate diet is possible on any budget).
11. Your cooking skills and preferences.
12. Food, sugar, or carbohydrate cravings or even addictions.

**Health Results has a range of resources and services to support the reversal of T2D. Reversing T2D is a team effort!**

Head to [www.HealthResults.com](http://www.HealthResults.com) for more free information, resources, and low-carbohydrate recipes.





## Recipes

This is just a taste of the delicious recipes available on the Health Results website. There are over 600 real food recipes, and more added every week. Enjoy reversing your type 2 diabetes.

There are many more recipes to support type 2 diabetes reversal at [www.HealthResults.com](http://www.HealthResults.com)



# 3-in-1 Breakfast Egg Muffins

6 servings // 10 mins preparation // 20 mins cooking time



Nutritious, quick, tasty. Egg muffins are an ideal low-carb breakfast, or to be enjoyed at any time of day. There are plenty of fillings to choose from so you can pick or create your favourite.

The sundried tomato with maca and watercress is very popular. The peppery watercress pairs beautifully with the sundried tomatoes and the slight nuttiness of the maca powder.

## Ingredients

### EGG MIX

10 eggs  
Black pepper and salt to taste

### BACON, CHEESE, MIXED SEEDS AND CHILLI MUFFINS

20g gruyere cheese  
3 bacon medallions  
1 tbsp mixed seeds  
1/4 tsp fresh chilli (finely diced)

### SUNDRIED TOMATO, MACA AND WATERCRESS MUFFINS

65g chopped sundried tomatoes  
1 tsp maca powder  
10g watercress

### GARLIC MUSHROOMS AND SPINACH MUFFINS

35g mushrooms  
20g spinach  
1 tsp chopped garlic  
Sprinkle of black pepper

## Method

//1. Begin by pre-heating your oven to gas mark 4 (180°C). If following the bacon and cheese recipe, grill your bacon medallions under the grill until crispy.

//2. Whilst your bacon cooks, crack the eggs and whisk them until you have a foamy mixture. Pour the mixture into a well-greased 12-hole muffin tray and be sure to fill each muffin hole halfway. Combine the bacon and cheese filling mixture and divide this equally into four, then add each equal part to four of the egg mix. Repeat this process for the sundried tomato and maca, and garlic mushroom and spinach fillings. You should end up with four bacon and cheese muffins, four sundried tomato and maca muffins, and four garlic mushroom and spinach muffins.

//3. Once done, pop your breakfast egg muffins in the middle of the oven to bake for 20 minutes. Once your muffins are cooked and no longer jiggle in the middle, remove them from the oven to cool. To keep these fresh, pop them in an airtight container in the fridge and consume within 3-5 days. Enjoy!

There are many more recipes to support type 2 diabetes reversal at [www.HealthResults.com](http://www.HealthResults.com)

# Easy Goats Cheese and Pine Nut Stuffed Mushrooms

2 servings // 5 mins preparations // 10 mins cooking time



These stuffed portobello mushrooms are topped with creamy goats cheese, crispy bacon pieces, and toasted pine nuts. A delicious and incredibly easy low-carb recipe - suitable for all mushroom lovers out there.

## Ingredients

2 Portobello mushrooms  
2 cloves garlic  
Oregano (pinch)  
Salt and pepper (to taste)  
100g soft goats cheese

40g pine nuts (lightly toasted)  
Parsley (to serve)  
Extra virgin olive oil (to drizzle)  
40g crispy bacon (optional)

## Method

//1. Begin by preheating your oven to 200°C. Place two portobello mushrooms on a baking tray and remove their stems. Divide the diced garlic between both mushrooms and season with oregano, salt and pepper. Finally, divide the cheese between both mushrooms and drizzle with a little olive oil.

//2. Cover the mushrooms in foil and place in the middle of the oven to bake for 10 minutes. Remove the foil after 5 minutes and place back in the oven. Once the mushrooms are tender and the cheese has started to golden/bubble slightly, remove from the oven.

//3. Divide the pine nuts and optional bacon between the two mushrooms and add a serving of parsley to each. Serve with a simple side salad of your choice.

There are many more recipes to support type 2 diabetes reversal at [www.HealthResults.com](http://www.HealthResults.com)

# Salmon, Broccoli, and Spinach Frittata



Whilst this recipe is quick, it really is a true crowd pleaser. Of course, you can find loads of frittata recipes on the internet but this is our favourite.

The flavours from the salmon and the egg really help to engage our taste buds and honestly, this salmon, broccoli, and spinach frittata can be enjoyed whatever time of the day – morning, lunch or dinner! It really is a quick and easy recipe, packed with protein, healthy fats, vitamins, and minerals!

You can choose to serve this frittata with a crunchy side salad (try adding some sauerkraut) or with some delicious greens. Our favourite would be the salad option!

4 servings // 10 mins preparation // 20 mins cooking time

## Ingredients

1 tbsp thyme	1 tbsp extra virgin olive oil
2 salmon fillets	Sprinkle salt and pepper
1 handful tenderstem broccoli	30g garden peas
1 handful spinach	6 medium eggs

## Method

- //1. Begin by frying your salmon fillets in a large pan with olive oil and thyme until both fillets are cooked (but not overdone).
- //2. Once your salmon fillets are done, tear them into tiny chunks and place them on a plate to one side.
- //3. In the same pan (using the same oil from the salmon) fry the peas and broccoli for a few minutes.
- //4. In a bowl, whisk together your eggs with some salt and pepper and then pour the mixture into your pan on medium heat. Top with the spinach and salmon chunks. Cook for 5 minutes and then transfer your pan under a grill and cook for another 5 minutes (or until done).
- //5. Once cooked, serve up with a side of salad/veg - enjoy!

There are many more recipes to support type 2 diabetes reversal at [www.HealthResults.com](http://www.HealthResults.com)



# Stuffed Ratatouille Peppers

4 servings // 10 mins preparation // 30 mins cooking time



Simple, delicious, and quick to make. Great to prep for the week ahead and ideal for a tasty lunch or dinner. With subtle spices, this dish is suitable for the whole family.

The grilled chicken in this recipe has a flavour that works wonderfully with the ratatouille.

Simple to prepare with the vegetables we suggest, or in fact any you have in your fridge. Chop and coat your chosen vegetables with a little flavouring and tinned tomatoes, then pop them into the oven to cook whilst you cook the chicken to perfection.

## Ingredients

4 large peppers  
1 large courgette  
1 large aubergine  
1 clove garlic (crushed)  
225g cherry tomatoes  
1 tin chopped tomatoes  
Bunch chopped parsley  
1 tbsp extra virgin olive oil  
1 large red onion

Pinch salt and pepper  
1 large avocado cut into chunks  
1 handful parmesan cheese

### GRILLED CHICKEN

350g chicken breasts  
1 tsp cumin seeds  
1/2 tsp smoked paprika  
1 tbsp harissa

## Method

//1. Begin by preheating your oven to gas mark 4 (180°C).

//2. Coat your chicken breasts with the harissa and then in a small bowl, mix together your cumin seeds and paprika, and sprinkle/coat over the chicken. Once done, place in the oven to cook for 25 minutes.

//3. Prep your ratatouille by cutting all your vegetables (minus the avocado) into chunks. Place the cut vegetables onto a baking tray (one big enough so all the veg can be spaced out). Drizzle with the olive oil and chopped tomatoes. Finish by flavouring the veg with a little pepper and salt. Once done, pop this in the oven beside your chicken and leave to cook for approximately 30 minutes, checking the chicken after 20 minutes (as you don't want to overcook the chicken).

//4. Whilst your chicken and veg are cooking, slice your bell peppers in half, de-seed them and then pop them on a baking tray. When you have 5 minutes left of cooking time for your ratatouille, pop the bell peppers in the oven to soften and remove the chicken (your chicken is cooked when the juices in the middle run clear).

//5. Once your 5 minutes is up, remove everything from the oven. Cut your chicken into chunks and add the avocado to your ratatouille. Stuff the vegetables and chicken into your bell peppers.

//6. Finish by sprinkling with a little extra seasoning and some parmesan cheese (or cheese of choice).

There are many more recipes to support type 2 diabetes reversal at [www.HealthResults.com](http://www.HealthResults.com)

# Harissa Spiced Chicken Traybake

4 servings // 10 mins preparation // 45-60 mins cooking time



For those of you who are new to harissa paste – it's a spicy red condiment that can be used within many recipes. It certainly adds a kick to any dish, but without being too overpowering. To make your own you need to blend chillies into a thick paste with garlic, extra virgin olive oil, and aromatic spices. We like to use cumin, caraway, and coriander. You can even add red peppers, tomatoes and lemon to make it a little bit bulkier. However, it's perfectly fine to buy a jar or tube of harissa paste – just make sure it has no added sugar or sweetener.

Our two favourite ingredients for this traybake recipe are the chicken and cherry vine tomatoes.

## Ingredients

6 chicken thighs	3 tbsp harissa paste
1 pack cherry vine tomatoes	1 tbsp extra virgin olive oil
1 lemon (wedges)	6 tenderstem broccoli stalks
1 garlic bulb (diced/crushed)	Sprinkle salt and pepper (to taste)
100g butternut squash (wedges)	1 tbsp cumin seeds
2 cups fresh spinach	1 large pepper (or mixed slices)
1 tsp extra virgin olive oil (for the spinach dressing)	1/3 tin chopped tomatoes
Sprinkle salt and pepper (for the spinach dressing)	

## Method

- //1. Begin by preheating your oven to gas mark 5 (190°C). Oil a roasting tray with 1 tbsp extra virgin olive oil.
- //2. Score lines across each chicken thigh and then rub the harissa paste over them - covering them evenly. Sprinkle with pepper, salt, and cumin and then place them in the roasting tray.
- //3. Scatter the garlic and other ingredients (excluding the vine tomatoes) around the chicken. Squeeze the lemon wedges all over the ingredients and then add the squeezed wedges into the tray and place the vine tomatoes on top.
- //4. Lightly toss and shake your roasting tray and then pop in the middle of the oven to roast for 45 minutes - 1 hour (until the chicken thighs are cooked and crispy). Once cooked, serve your harissa spiced chicken traybake with a side of fresh spinach tossed with 1 tsp extra virgin olive oil. Enjoy!

There are many more recipes to support type 2 diabetes reversal at [www.HealthResults.com](http://www.HealthResults.com)

# Smoky Pork Mexican

## Burrito Bowl



Burrito bowls are a popular dish, but we thought that it would be a good idea to make a healthier one. This smoky pork Mexican burrito bowl is packed with the most delicious flavours and it works wonders with the burrito salad.

This recipe isn't complicated at all. All it requires are a few ingredients, two essential spices – cumin seeds and smoked paprika – and roughly 30 minutes of your time. The best part about this dish is the smoky sauce that the pork cooks in. It's absolutely delicious and the flavour really complements the rest of the salad. Pair your bowl with a fresh dollop of homemade guacamole (which only requires three ingredients) and you've got yourself a flavoursome dish that's perfect for the whole family.

3 servings // 10 mins preparation // 20 mins cooking time

### Ingredients

#### PORK

500g pork (diced)  
2 tsp cumin seeds  
2 tsp smoked paprika  
1 pinch salt  
1 pinch black pepper  
3 cloves garlic finely chopped  
1 tbsp extra virgin olive oil  
1 large onion diced  
2 medium red chillies (finely sliced with no seeds)  
1 large green pepper (sliced)  
1 tin black beans  
1 tin chopped tomatoes  
1 tbsp apple cider vinegar organic  
1 tsp tomato purée

#### BURRITO BOWL

2 medium cauliflowers grated into cauliflower rice  
3 tbsp fermented red cabbage  
15 vine cherry tomatoes (sliced)  
3 large avocado (mashed into a purée)  
3 tbsp lemon juice from a fresh lemon  
3 tsp black pepper  
2 medium limes (wedges)  
3 cups mixed green leaves with spinach  
3 tsp parsley (finely chopped)

### Method

//1. Begin by heating a large pan with oil. Add the pork to the pan and cook on medium heat until brown on all sides. //2. Add the cumin seeds, smoked paprika, salt, pepper, garlic, onion, red chilli, and green pepper to the pan and cook for a few more minutes. //3. Add the chopped tomatoes, apple cider vinegar, and drained black beans and mix everything together. Bring to the boil and then simmer for 30 minutes, adding the tomato purée halfway through before stirring and leaving to simmer for the remaining 15 minutes. //4. While your pork is cooking, prepare your burrito bowl. //5. Evenly split the burrito bowl ingredients between your 3 servings and add the cauliflower rice, cabbage, mixed salad and spinach, and chopped tomatoes to sections of separate bowls. Leave space for the pork. E.g. 3 cups of spinach would be one cup per bowl. //6. Prepare the guacamole by adding a tbsp of lemon and pepper to the mashed avocado and mixing together. Set aside. //7. Once the pork has cooked completely and you have a thick sauce texture, add a portion to each bowl. Top the bowls with a tbsp of guacamole, a wedge of lime and sprinkle with parsley and more pepper (if you wish). Serve up and enjoy!

## Fast Low-Carb Greek Yoghurt, Berries, and Nuts



Low-carbohydrate and in a hurry. With a prep time of under one minute this is a go to for low-carbohydrate fast food. An ideal breakfast or at any time of day. The protein and fat in the yoghurt and nuts will keep you full, and the berries bring freshness and zing. You can go with either full-fat or low-fat Greek yoghurt – whichever suits you best. Experiment with different nuts and berries to create your own favourite combo. Pecans are particularly delicious in this.

1 serving // 1 min preparation

### **I** Ingredients

200g Greek yoghurt  
Small handful of your favourite nuts  
Small handful of your favourite berries

### **I** Method

//1. This couldn't be easier. Spoon the yoghurt into a small bowl or cup. Sprinkle with nuts and berries.

//2. Enjoy!

| There are many more recipes to support type 2 diabetes reversal at [www.HealthResults.com](http://www.HealthResults.com)



## Your Next Steps

We hope the information provided in this book has been useful. A low-carbohydrate diet can be a highly effective and sustainable option for most people with type 2 diabetes. Dietary change is a journey, with plenty of learning along the way. The key is to find your personal carbohydrate tolerance, whilst enjoying your food, and finding something you can sustain over the longer term.

**Now all that is left to do is to take action, learn, notice, and enjoy. We are with you on your mission.**

**The Health Results Team**





# HEALTH RESULTS

EXPLORE, MEASURE & IMPROVE your inner *(metabolic)* health