

Dr Dawn's Guide to Healthy Eating for Diabetes

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Dawn is the presenter of Channel 4's series *Born Naughty?*, one of the doctors on ITV1's *This Morning* and the resident GP on the health hour on LBC radio. She writes for a variety of publications, including *Healthspan*, *Healthy Food Guide* and *NetDoctor*. Her first book, *Dr Dawn's Health Check*, was published by Mitchell Beazley. *Dr Dawn's Guide to Healthy Eating for Diabetes* is one of five Dr Dawn Guides published by Sheldon Press in 2016. Dawn qualified at London University in 1987. When not working, she is a keen cyclist and an enthusiastic supporter of children's charities. Her website is at <www.dr dawn.com>. Follow her on Twitter @drdawnharper.

Azmina Govindji is an award-winning dietitian, international speaker and bestselling author. She is a media spokesperson for the British Dietetic Association, resident dietitian to <www.patient.co.uk>, and a regular contributor to the NHS Choices website. Her television appearances include Sky and ITV breakfast news, *This Morning* as nutritionist (2006–7), *The One Show*, *The Wright Stuff* and BBC's *Watchdog*. She is co-founder of the award-winning RDUK Twitter chats that reach an average of two million people and involve between 60 and 85 expert nutrition participants.

Azmina has written over a dozen books on weight management and diabetes, including cookbooks that are available worldwide. She was chief dietitian to Diabetes UK for eight years and now runs her own nutrition consultancy. She offers authoritative opinion on a range of diet-related topics, and her lively personality and down-to-earth approach help her to simplify scientific dietary principles into realistic hints and tips. Azmina is a mum of two who believes that healthy food can be tasty, and she's passionate about helping people make sense of the hype around diet. Her website is at <www.azminanutrition.com>. Follow her on Twitter @AzminaNutrition or find her on Facebook at Azmina Nutrition.

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Overcoming Common Problems

Dr Dawn's Guide to Healthy Eating for Diabetes

DR DAWN HARPER

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Note to the reader

The dietary advice and recipes in this book are intended as a general guide, and not as a substitute for the medical advice of your doctor. Always keep to the advice of your own dietitian and doctor, particularly with respect to any symptoms that may require diagnosis or medical attention.

Introduction

Patients often tell me I am lucky because I am obviously one of those people who is naturally slim. In fact, I'm one of the few people who knows that she isn't lucky! Through my work on Channel 4's *Embarrassing Bodies*, I have been tested for no end of things, but some of the most interesting experiences have been being tested for a whole host of fat genes – and I pretty much have a full house. I have also had my gut flora analysed. We all have about 2 kg of good bacteria in our guts that help us digest our food and they come from two main bacterial families. We have different proportions of these families. One family is significantly better at absorbing energy from our food and much work is being done looking at the possibility of altering gut flora to help with weight loss, but yes, you guessed it, I have 98 per cent of the family that are more efficient at extracting energy. So, I am actually genetically and biologically pre-programmed to be overweight. This news wasn't a huge surprise to me as I have always felt that I have gained weight more easily than my friends. I really watch what I eat and exercise regularly and I know that if I let that slip the scales tell the story.

A pound of fat is the equivalent to 3,500 calories and those of you who have tried to lose weight in the past will have been told that if you can restrict your daily calorie intake by 500 calories a day that will lead to a weight loss of a pound over the course of a week. The thing is it is much easier to overeat by 500 calories a day than it is to undereat by 500 calories a day. The average woman needs around 2,000 calories a day and the average man 2,500 calories. These are guesstimates though because bigger people may need more calories just to move those extra pounds around, and the more active you are the more you can afford to take in. If I were to eat an extra 500 calories a day every day for a year, I would gain 22.2 kg which would take my body mass index (see Chapter 2) from a healthy 20 to 29, which is bordering on clinically obese, and that would put me at significant risk of developing type 2 diabetes. The problem is, it is all too easy to eat those extra calories. In the western world we live in an obesogenic society. Food is readily available, and much

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of it the wrong food, portion sizes have rocketed and we are more sedentary than generations before us. In addition, 80 per cent of us don't achieve the recommended levels of 30 minutes of exercise five times a week.

There are 3.2 million people in the UK with diabetes mellitus; 90 per cent of those are people with type 2 diabetes and the reason that a lot of these people have diabetes is related to weight. On top of that, today, there could be another 750,000 people walking around with type 2 diabetes who are yet to be diagnosed. And on top of that there are an estimated 11.5 million people today who are at risk of type 2 diabetes. We spend £1 million per hour in the NHS on managing diabetes. You don't need a financial or business brain to work out that if the NHS is struggling to fund itself today (which it is), then we could be seeing the end of our NHS very soon if we don't ALL act now.

In this book I want to explain the risks associated with having diabetes and help you to do all that you can to reduce your chances of developing any of the complications. And I am delighted to have teamed up with Azmina Govindji to provide you with some diabetes-friendly recipes that all the family can enjoy.

1

Diabetes – the facts

In this book when I talk about diabetes, I am referring to diabetes mellitus. Diabetes insipidus is a different condition where you have problems controlling the balance of water in your body. Like diabetes mellitus it can make you excessively thirsty, but it is not linked to a problem with the pancreas, being overweight or obese. It is due to a problem either in the brain or in the kidneys. There are two types of diabetes mellitus. Type 2 is by far the most common type, accounting for 90 to 95 per cent of all adults with diabetes, and is largely related to excess weight. Type 1 diabetes is not linked to weight. It is a condition where your body develops antibodies to the beta cells in your pancreas. These are the cells that produce insulin and very quickly your insulin levels drop.

Type 1 diabetes

Type 1 diabetes usually appears in younger people and often in children.

What causes type 1 diabetes?

Type 1 diabetes is a disorder of the immune system, where the body produces antibodies to its own pancreas and stops the production of insulin. We are not sure why this happens but researchers are looking into the possibility that it is triggered by a virus in those that are susceptible. There is also a genetic component of type 1 diabetes in that it does seem to run in families.

What are the symptoms of type 1 diabetes?

The most common symptoms are feeling excessively thirsty and passing more urine. You may also feel very tired and lethargic and tend to lose weight unexpectedly. You may notice that you get recurrent infections, particularly recurrent thrush, and that any

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wounds are slow to heal. There can also be blurred vision as the lens of the eye changes shape. If left undiagnosed, meaning that your blood sugar levels are allowed to run very high, you may vomit and develop fruity smelling breath. This is a medical emergency and may also be associated with abdominal pain. If sugar levels are allowed to continue to rise unchecked, this can ultimately cause a fit or coma so don't delay.

How is type 1 diabetes diagnosed?

A simple blood test will show if your sugar levels are high: if your blood sugar is greater than 11.1 mmol/litre then a diagnosis is made straight away. Type 1 diabetes is also diagnosed if the blood sugar level of a fasting blood sample is greater than 7 mmol/litre. If your sugar level is high but not this high, you will be asked to do something called a glucose tolerance test (GTT; see below). Another blood test, called the glycated haemoglobin (HbA1c), gives us an idea of how well blood sugar levels have been controlled in recent weeks. If it is greater than 6.5 per cent this is also diagnostic of diabetes; the HbA1c test is also used to monitor diabetes after diagnosis.

How is type 1 diabetes treated?

Type 1 diabetes is treated with insulin. Insulin can be given as individual injections and there are many different types. Some are short acting, meaning their effect doesn't last long; some injections have intermediate action; and some are long acting. You may well need a combination of different types. Insulin can also be given via a pump, which means fewer injections. If you are injecting regularly you will be advised to rotate your injection sites as repeated injections at the same site will be uncomfortable and can cause changes in the underlying fatty tissue. These changes are called lipodystrophy and look like dimples and lumps under the skin. You will also need to follow a diet and lifestyle like the one described on pages 5–6 for people with type 2 diabetes.

Type 2 diabetes

Type 2 diabetes used to also be called adult onset or maturity onset diabetes because it was seen in older people, generally over 40 years. These alternative names have now been dropped because that is not the case. Type 2 diabetes is usually linked to being overweight and, because we are becoming bigger as a nation and lots of young people are now clinically obese, we are seeing type 2 diabetes in young adults and even in children. Unlike type 1 diabetes, type 2 diabetes develops slowly. If it is picked up early then often it can be managed with diet alone but if left untreated will need prescription medication and ultimately some people with type 2 diabetes will need insulin by injection. Type 2 diabetes develops because either you have become resistant to the effect of insulin, so normal insulin levels just aren't enough to keep your blood sugar under control, or your body doesn't make enough insulin. In some cases it can be a mixture of both.

Who gets type 2 diabetes?

More people than you think! It is estimated that in the UK alone while you are reading this, there are 750,000 people walking around getting on with their day to day life who have diabetes and have no idea. Because the symptoms can be vague (see below) and come on so insidiously it is perfectly possible to have the condition and not be aware that you are unwell.

Risk factors for type 2 diabetes include the following:

- *Weight* Being clinically overweight (BMI 25–30; or above 23 for people of Asian descent) or clinically obese (BMI >30) significantly increases your risk and most people with type 2 diabetes are overweight.
- *Waist circumference* Women with waist circumferences of greater than 80 cm (31.5 inches) and greater than 94 cm (37 inches) for men; or 90 cm (35.5 inches) if you are an Asian or Afro-Caribbean male.
- *Ethnicity* Type 2 diabetes is about five times more common in people of Asian and Afro-Caribbean descent.
- *Family history* If your mother, father, brother, sister or child has diabetes, you are more likely to develop the condition.

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- *Impaired glucose tolerance* If it is found, on routine testing, that you have a slightly raised glucose level which is not high enough to make a diagnosis of diabetes but is higher than normal, you will be asked to have what is called a glucose tolerance test. This involves having nothing to eat or drink for 8 or 12 hours. You will have a blood test, which is referred to as the 'fasting sample'. You will then be given a sugary drink containing a known amount of glucose and blood samples are taken again at given intervals to see how your body manages that known amount of sugar. If your body struggles to get your blood sugar level back to the normal range then this is called impaired glucose tolerance and puts you at increased risk of developing type 2 diabetes.
- *Pregnancy* If you have impaired glucose tolerance or develop diabetes during pregnancy this usually resolves after the baby is born, but it does increase your risk of developing type 2 diabetes later in life.

How is type 2 diabetes diagnosed?

The symptoms of type 2 diabetes are vague and come on slowly. You may experience lethargy and increased thirst. You may find that you are passing urine more frequently and you may have recurrent infections, such as thrush, but because they develop slowly over many, many months a lot of people don't really notice so most cases of type 2 diabetes are picked up after routine health checks. In the first instance your doctor may notice there is sugar in your urine, which is picked up on urine dip-stick testing. If this is found you will be asked to have a blood test, usually on a fasting sample. That means having nothing to eat or drink for several hours (usually about eight hours, so in most instances this would mean overnight) before your blood test. Fasting blood sugar levels should be between 3.6 and 6.1 mmol/litre. If fasting sugar levels are higher than 7 mmol/litre, or if what we call a random glucose level, i.e. one taken at any time of the day, is greater than 11.1 mmol/litre this is diagnostic of diabetes. If an individual has no symptoms but the abnormality is picked up on routine testing then we repeat the tests to confirm the diagnosis

but one test is enough for diagnosis if a person has symptoms of type 2 diabetes.

How is type 2 diabetes managed?

In the first instance you will probably be asked to have an appointment with the practice nurse to talk through what you can do to change your diet and lifestyle. For some, lifestyle changes alone may be all that is needed and I will go into this in more depth later on – it is important that you know exactly what you can and can't eat. It may feel daunting at first but once you have read this book hopefully you will have a clearer idea of what you need to do. While you are waiting for your first appointment with the practice nurse, try to keep a food diary so that the nurse (and you!) can see where you might be going wrong and give you some tips on how you manage your eating habits in the future. You will need to adopt a low-fat, -salt and -sugar diet. Low fat, because managing your weight is crucial; low salt, because people with diabetes are prone to high blood pressure and kidney problems; and low sugar, because by definition, people with diabetes have difficulty handling and processing sugar and, of course, low sugar will help keep your weight under control too. As a rough guide, your diet should look like this:

- total fat less than 35 per cent of total calorie intake;
- trans fats and saturated fats should constitute less than 33 per cent of total fat intake;
- total carbohydrates should make up 40–60 per cent of your total calorie intake.

It's tough but you can reduce your fat intake by limiting fried or processed foods and high-fat snacks, such as crisps, cake and biscuits; you will also need to be careful with sugar intake from fizzy drinks, squashes and cordials and limit cakes and biscuits. You should choose foods with a low glycaemic index, which means foods that produce less of a peak in blood sugar levels. So, for example, the blood sugar peak seen after eating pasta is much lower than that after eating chips because pasta has a lower glycaemic index than potato.

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Not everyone with type 2 diabetes is overweight but the majority are, and tackling your weight will be a priority for you. It is likely to be a long haul but even modest weight loss can make a real difference. Depending on the blood results, your GP and nurse may suggest that you look at lifestyle changes alone for a few months. If they can see your HbA1c returning to normal as a result of these changes then you may not need to do anything more other than stick to your new healthy living plan.

What if my blood tests remain abnormal?

If your blood tests remain abnormal despite making changes to your lifestyle, your doctor will prescribe medication to help bring your blood sugar levels under control. It is important that you persevere with lifestyle changes, as even if you need medication now, as you continue to bring your weight down and improve your fitness you may find that you will be able to come off your medication. Although please don't ever be tempted to try this without the help of your doctor. There are several types of tablets used to keep blood sugar levels under control.

Metformin The drug metformin is a biguanide. It works by enhancing the use of available glucose. It is the first drug we use in type 2 diabetes that is associated with weight issues and, since most, although not all, people with type 2 diabetes are overweight, this is often the first drug of choice. It improves sensitivity to insulin and may help with weight loss.

Sulfonylureas These drugs work by enhancing insulin secretion, so by definition they are only useful if the pancreas is capable of producing some insulin. There are different sulfonylureas and which one you are prescribed will depend on your individual circumstances. They have different lengths of action, that is, depending on which type you have, each dose you take works for a different length of time – some of the more long-acting types may mean that you are at risk of becoming hypoglycaemic; this is when your blood sugar falls too low. This can be a medical emergency, so your doctor will fine tune which particular sulfonylurea is best for you. The sulfonylureas include glibenclamide, gliclazide, gliclazide, glimepiride, glipizide and tolbutamide.

Nateglinide and repaglinide These drugs stimulate the release of insulin. They work very quickly after being taken, but they don't last for long so they are taken immediately before eating. Nateglinide is only licensed to be used in conjunction with metformin, but repaglinide can be used on its own in people with type 2 diabetes who are not overweight or who cannot tolerate metformin.

Pioglitazone This drug works by reducing insulin resistance. It can be used on its own or alongside metformin or a sulfonylurea but it must be used with care. It has been shown to increase the risk of heart failure when combined with insulin, so shouldn't be used in anyone with known heart failure, and all patients who take this drug need to be closely monitored.

Gliptins These drugs increase insulin secretion and reduce glucagon secretion. Glucagon is another pancreatic hormone which works to raise blood sugar levels when they start to fall. They can be used on their own or in conjunction with metformin or a sulfonylurea, or with pioglitazone. They include saxagliptin, sitagliptin and vildagliptin.

Acarbose This drug delays the digestion and absorption of carbohydrate and sugar from the gut. It is generally reserved for those patients who cannot tolerate other anti-diabetic medication.

What if tablets can't control my type 2 diabetes?

If you have tried lifestyle changes and despite adding in tablets your sugar levels and HbA1c levels remain abnormal, your doctor will suggest you try injection therapy. There are two main types of injection therapy:

- *insulin*, see type 1 diabetes;
- *exenatide and liraglutide*, these drugs increase insulin secretion, reduce glucagon secretion and delay gastric emptying so that there is a slower delivery of food to the small intestine where the sugar is absorbed.

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Will I need other medication?

If you have diabetes, whether it is type 1 or type 2, your risk of developing high blood pressure, high cholesterol and heart disease, among other things, increases. Your doctor will want to monitor you for these problems and will advise on whether you need medication. The good news through all of this, though, is that if you persevere with your lifestyle changes you could potentially, under the supervision of your medical team, come off all the medicines. That is quite some incentive!

How will my diabetes be monitored?

You will need regular review at your GP surgery and maybe also at the hospital. You will need blood tests to check your glucose levels and your HbA1c; you will also need cholesterol blood tests and tests to check your kidney function. You will have your eyes checked every year, as diabetes can affect your vision, and you will have regular blood pressure checks and checks on your sensation and your feet. It is important that whenever you have an appointment you leave knowing when the next one will be and whether it is down to you to make a note of when to go back or you will be informed near the appointment date.

Why is it so important to control my sugar level when I don't feel unwell with it?

You may feel totally well with higher than normal blood sugar levels but persistently high glucose levels in the blood damages the blood vessels, the body's organs and the nerves. In real terms, this means that if you ignore your condition you are at significant risk of some serious health issues in the future. I will cover each of these in depth in this book but briefly they include:

- heart disease
- stroke
- high blood pressure
- high cholesterol
- visual problems

- kidney disease
- nerve damage
- foot problems
- sexual problems
- problems in pregnancy.

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There are 3.2 million people in the UK with diabetes mellitus; 90 per cent of those are people with type 2 diabetes and the reason that a lot of these people have diabetes is related to weight. On top of that, today, there could be another 750,000 people walking around with type 2 diabetes who are yet to be diagnosed. And on top of that there are an estimated 11.5 million people today who are at risk of type 2 diabetes. We spend £1 million per hour in the NHS on managing diabetes. You don't need a financial or business brain to work out that if the NHS is struggling to fund itself today (which it is), then we could be seeing the end of our NHS very soon if we don't ALL act now.

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