



Diet and Diabetes

This booklet provides you with information about various diets, food labelling, weight loss, the importance of food groups and much more.

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Introduction

This booklet is designed to help you through some of the confusing and complicated aspects of diet and the reasons why what, and how much we eat, are so important for people with Type 1 or Type 2 diabetes.

The three cornerstones of treatment of both types of diabetes are:

- Insulin for Type 1 diabetes and medications/insulin for Type 2 diabetes
- Diet
- Exercise.

There are many different diets and this booklet will look at the most common ones but it is also important that we recognise the importance of carbohydrates for people with diabetes.

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Diet – One of the Three Key Elements of Diabetes Treatment

We all have a diet of some form or another, like it or not. In its broadest sense a person's diet is simply what they eat, nothing more complex than that, however, it doesn't take long before this broad definition becomes a bit pointless because it simply does not address the many different types of diet available. As we have said, we know that 'Diet' is one of the three key elements to managing diabetes. IDDT believes in the right of everybody to have an informed choice as to how their diabetes is managed and that includes diet. With this in mind, IDDT is not an advocate of any particular diet or the automatic superiority of one diet over another.

IDDT believes that choice of diet is a matter for the individual, wherever possible and that decisions about choice of diet may change, dependent on factors such as lifestyle, belief, culture and health. As such, this booklet is not about giving advice but about giving information.



Dietary Recommendations

The NHS does not specify any particular diet. The NHS rather tends to focus on the outcomes of a diet, for example weight loss or reducing blood pressure, rather than the means of getting there. There are many, many different types of diet available and what may suit one person may or may not suit another.

However, in 2023 the Diabetes and Nutrition Study Group of the European Association for the Study of Diabetes (EASD), issued new updated dietary guidelines for people with diabetes. These guidelines are evidence based and therefore useful for people living with diabetes in Europe and the UK. Here they are:

European Dietary Guidelines

Key evidence-based dietary recommendations:

- Updated EASD recommendations advise people with diabetes to eat more whole grains, fruits, vegetables, legumes and nuts.
- People with diabetes should minimise eating meat and refined grains.

Dietary patterns focused on eating more whole grains, vegetables, fruits, legumes, nuts and seeds are best for the management of diabetes, according to updated guidelines for people with diabetes from the EASD Diabetes and Nutrition Study Group (last updated 2004)

The group found that multiple dietary patterns, including the Mediterranean diet, the Nordic diet and the vegetarian diet, could all provide benefits for people living with diabetes. (The Nordic diet is similar to the Mediterranean diet, but focuses on whole foods that are typically found in Nordic regions. It is mostly plant-based, seasonal foods that are high in protein, complex carbohydrates and healthy fats.)

Key recommendations for people with diabetes

- **Foods that are high in dietary fibre should be encouraged.**
- **Sugar should comprise of less than 10% of total energy.**
- **Fat should mainly come from plant-based foods such as nuts and seeds.**
- **Protein intake should comprise 10% to 20% of total energy intake.**
- **Diets rich in whole grains, vegetables, fruits, legumes, nuts and seeds are best.**

The lead researcher confirmed that these guidelines provide flexibility and freedom in what is promoted for all the cultural, social and personal preferences we have, so that adherence in the long term should be possible, as normally, the more extreme or different the diet, the harder it is to follow.

The guidelines form a starting point for nutrition therapy, which all people with diabetes need and deserve. This is particularly important, as the vast majority of health professionals are not trained to provide nutrition support.

Points on interest from the European Guidelines

For Type 2 diabetes prevention - the guidelines recommend people with overweight or obesity lose at least 5% of their body weight to reduce their risk. A combination of a health dietary pattern, regular physical activity, avoiding excess weight and not smoking are also recommended for diabetes prevention.

For weight loss - a variety of diet types and macronutrient compositions can induce and maintain weight loss, as long as dietary recommendations are followed. Low-energy formula products can be used either temporarily for weight-loss induction, as a total diet replacement or by replacing one to two meals per day.

Remission of Type 2 diabetes - this can be achieved through sustained weight loss, and a low-energy total diet replacement program for 12 to 20 weeks. With carefully adjusted glucose-lowering and antihypertensive medication, it could provide a 10% to 15% weight loss.

Carbohydrate intake - the group emphasised these should be from foods that are naturally high in dietary fibre, especially minimally processed whole grains, vegetables, legumes, seeds, nuts and whole fruits. Sugar intake should be below 10% of a person's total energy intake, and non-nutritive sweeteners may be used as a replacement for sugar.

Dietary fats – these should come from plant-based foods that are high in both monounsaturated and polyunsaturated fats. Saturated fats should make up less than 10% of a person's total energy and trans fats should comprise less than 1% of total energy.

Proteins - for a person with diabetes and normal weight, intake should comprise 10% to 20% of total energy intake. Higher intakes are recommended for a people aged 65 years and older. For people with Type 2 diabetes and overweight or obesity with an estimated glomerular filtration rate of more than 60 mL/min/1.73 m², protein intake may be increased to 23% to 32% short term in the context of a weight-loss diet. Protein intake should be 10% to 15% for people with moderate diabetic nephropathy.

Future research

The group recommends that more research is needed to know (i) how to promote long-term behavioural change in people with diabetes and (ii) to explore what governments can do to promote a healthy diet.

(Diabetologia, May 2023)

The Variety of Diets

What is a healthy, balanced diet?

By way of comparison, we should have a brief look at what is meant by a healthy, balanced diet. A healthy diet is all about variety and choosing different foods from each of the main food groups every day. The main food groups are:

- Fruit and veg
- Starchy foods, like bread, pasta and rice
- Protein foods, like beans, pulses, nuts, eggs, meat and fish
- Dairy and alternatives
- Oils and spreads



Let us start by talking about some of the diets that are out there. Some of them you will almost certainly have heard of, some of them may be new to you.

Mediterranean Diet

The Mediterranean diet is different from many of the other diets we are familiar with. It wasn't developed as a weight loss plan - in fact, it wasn't developed at all but is a style of eating in a region that evolved naturally over centuries. There's no official way to follow it but it's popular because it's a well-rounded approach to eating that isn't restrictive. The diet includes the food staples of people who live in the countries around the Mediterranean Sea, such as Greece, Croatia, and Italy.

You'll find that in their meals, they emphasise a plant-based eating approach loaded with fresh vegetables and healthy fats, including olive oil and omega-3 fatty acids from fish. It avoids red meat, sugary foods, and dairy (though small amounts like yogurt and cheese are included).

There are several recognised health benefits of the Mediterranean diet:

- It can reduce the risk of mortality from cardiovascular conditions
- It can reduce LDL (bad) cholesterol
- It has been credited with decreasing the risk of certain cancers and dementia

Can it help with weight loss?

As a traditional way of eating for many cultures worldwide, the Mediterranean diet wasn't designed for weight loss. It just so happens that one of the healthiest diets around the globe is also good for keeping your weight down. Studies have shown that it is better for weight loss than a low-fat diet but no better than a low-carb diet. Most of those reviewing the diet comment that really it is about how you eat; eat sensibly and you can lose weight but the diet, even without its restrictions, is not a free-for-all eating plan. If you are not familiar with Mediterranean style eating there are plenty of card/ calorie counted meal plans available to give ideas and inspiration.

In summary, Mediterranean eating improves blood sugar control in those already diagnosed with diabetes, suggesting it can be a good way to manage the disease. Following a Mediterranean diet can be an incredibly well-rounded way to lose weight that ditches gimmicks and doesn't require calorie or macronutrient counting as other diets do. With allowing healthy fat, it can be satisfying, too.

Vegetarian/Vegan Diets

The term 'vegetarian' is an umbrella term for a range of diets, defined by the choice of the individual with regard to the consumption of animal products. The Vegetarian Society defines a vegetarian as "Someone who lives on a diet of grains, pulses, nuts, seeds, vegetables and fruits with, or without, the use of dairy products and eggs. A vegetarian does not eat any meat, poultry, game, fish, shellfish or by-products of slaughter."

There are different types of vegetarians:

- Lacto-ovo-vegetarians eat both dairy products and eggs (usually free range).
- Lacto-vegetarians eat dairy products, but avoid eggs.
- Vegans do not eat or wear any products derived from animals – no meat, fish, dairy or

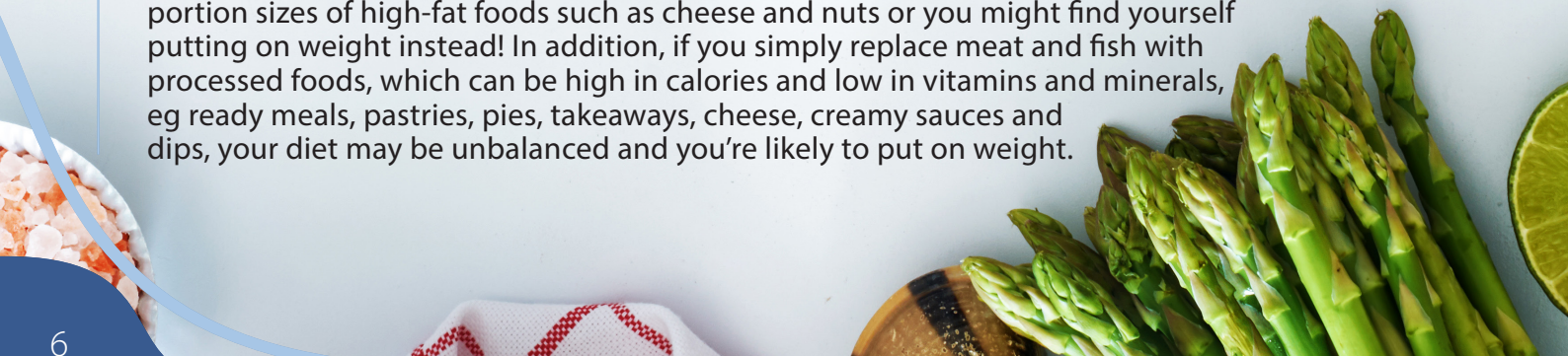
According to this definition, people who only eat fish (pescatarian) or poultry (pollotarian) are not, in fact, vegetarian.

Benefits of a plant-based diet

Plant-based foods, particularly fruit and vegetables, nuts, pulses and seeds have been shown to help in the treatment of many chronic diseases and are often associated with lower rates of Type 2 diabetes, less hypertension and lower cholesterol levels. Recent studies have also shown that a vegetarian diet can reduce blood glucose levels and the risk of heart disease.

Vegetarian diets have been shown to be beneficial for people with Type 2 diabetes where weight loss is often the most effective way to manage the condition. A wholefood vegetarian diet often contains fewer calories and can help you to maintain a healthy body weight.

If you are adopting a vegetarian diet to lose weight, it is important to keep an eye on portion sizes of high-fat foods such as cheese and nuts or you might find yourself putting on weight instead! In addition, if you simply replace meat and fish with processed foods, which can be high in calories and low in vitamins and minerals, eg ready meals, pastries, pies, takeaways, cheese, creamy sauces and dips, your diet may be unbalanced and you're likely to put on weight.



This is why it is important to replace such high-fat foods like these with cottage cheese, eggs, dishes based around beans, tomato-based sauces, and nuts and seeds in moderation, and fill up on vegetables served with wholegrain rice, pasta or bread. It is extremely important to watch your overall portions.

People who are new to vegetarianism are often concerned that they are getting the right amounts of vitamins and minerals. A vegetarian diet can provide all the nutrients you need for good health, the only exception to this is vitamin B12 for vegans, which vegetarians can obtain from eggs and dairy foods. The only reliable sources for vegans are fortified foods such as non-dairy milks, yeast extracts and breakfast cereals. Alternatively, a suitable nutritional supplement is recommended.

Specific nutritional supplements may also be considered for people who are particularly at risk of deficiencies, for example elderly people. You should speak to your doctor if you think you may be at risk of any nutrient deficiency.

Low-Carb Diets

Eating a low carbohydrate diet means cutting down on the amount of carbohydrates (carbs) you eat. It is generally agreed that you should eat no more than 130g a day. The evidence shows these diets can be safe and effective in helping people with diabetes manage their weight, blood glucose (sugar) levels and risk of heart disease in the short term. If you are not familiar with counting the grams of carbohydrate (carb counting) in foods then typically a medium-sized slice of bread is about 10 to 15g of carbs, which is about the same as a regular apple. On the other hand, a medium jacket potato could have about 30-40g of carbs, as does a litre of orange juice.

It is often recommended to help people lose weight and can minimise the risk or impact of diabetes complications. For people with Type 2 diabetes, research has shown that losing 15kg within three to five months will give them best chance of putting their diabetes into remission. That said, there is little evidence of a low-carb diet being any more beneficial, in the long-term than other approaches.

There can be side effects; if you have Type 1 diabetes or treat your Type 2 diabetes with insulin or any other glucose-lowering medication that puts you at risk of hypos (low blood sugars), following a low-carb diet may increase this risk. Speak to your healthcare team about this so they can help you adjust your medications to reduce your risk of hypos. Following a low-carb diet may also lead to other side effects, such as constipation or bad breath but these are often temporary.



Keto Diets

A keto (ketogenic) diet is a **very** low-carb, high fat diet, considered to be eating around 30g of carbohydrates per day or below. Ketogenic diets have been shown to be effective at lowering blood glucose levels and reducing weight.

On a ketogenic diet, blood glucose levels are kept at a low but healthy level which encourages the body to break down fat into a fuel source known as ketones (ketosis). The diet helps burn body fat and therefore has particular advantages for those looking to lose weight, including people with pre-diabetes (those otherwise at risk of Type 2 diabetes). The diet does require an adaptation period during which people may experience 'keto-flu', the symptoms of which may last for up to four weeks and include brain fog / slow thinking, dizziness, fatigue, racing heart rate when lying down, insomnia and cravings. Other side effects can include nutrient deficiencies, changes in bowel habits, leg cramps, bad breath, loss of energy and has been associated with longer-term health issues such as fatty liver disease.

The diet is not recommended for long-term weight management and there is very little evidence of the long-term effects of the keto diet. The diet should ideally be undertaken with medical advice and support.

Atkins Diet

Most of us will have heard both good and bad reports about it. The diet was originally developed in the 1970s by Dr Robert Atkins who proposed that with this diet you can lose weight while eating as much protein and fat as you want, as long as you avoid foods high in carbs.

The diet has fallen in and out of favour and has undergone several modifications, however, its central principal remains the same - that weight loss can be achieved by the adoption of a low-carbohydrate diet. In this, the Atkins diet has many similarities to a keto or ultra-low carb diet. It also is a "phased" diet and while this is complex, weight loss can be achieved but a comparatively low-carb diet is needed to maintain any loss.

The Atkins Diet acknowledges that drastically cutting carbs in the early phase of the programme can result in some side effects (similar to keto-flu). Some very low carb diets restrict carbohydrates so much that they result in nutritional deficiencies or insufficient fibre, which can cause such health problems as constipation, diarrhea and nausea. With this in mind, the diet also now recommends taking a small amount of extra salt, along with vitamins or supplements.

Vegetarians - it is possible to do the Atkins diet as a vegetarian (and even vegan), but difficult.

Exercise - the Atkins Diet claims exercise isn't vital for weight loss but acknowledges that exercise can help maintain your weight, as well as offer other health benefits.

Health benefits – this diet says that its eating plan can prevent or improve serious health conditions, such as metabolic syndrome, diabetes, high blood pressure and cardiovascular disease. In fact, almost any diet that helps you shed excess weight can reduce or even reverse risk factors for cardiovascular disease and diabetes.

DASH Plan

The DASH (Dietary Approaches to Stop Hypertension) plan is an eating plan to lower or control high blood pressure (hypertension). As such, it is not designed specifically for people with diabetes but may be of interest to people with diabetes who have associated conditions, such as high blood pressure. It emphasises foods that are lower in sodium, as well as foods that are rich in potassium, magnesium and calcium - nutrients that help lower blood pressure.

The DASH diet features meals with plenty of vegetables, fruits and low-fat dairy products, as well as whole grains, fish, poultry and nuts with limited portions of red meats, sweets and sugary beverages. The diet is simple:

- Eat more fruits, vegetables, and low-fat dairy foods
- Cut back on foods that are high in saturated fat, cholesterol, and trans fats
- Eat more whole-grain foods, fish, poultry, and nuts
- Limit sodium, sweets, sugary drinks, and red meats.



Lowers Blood Pressure - research has shown that people who were on the DASH diets lowered their blood pressure within 2 weeks. Interestingly, the DASH diet demonstrably lowers blood pressure in both healthy people with normal blood pressure and those with high blood pressure and the greatest reductions in blood pressure were seen in people with the lowest salt consumption.

May Aid Weight Loss – as DASH was designed to lower blood pressure, you shouldn't expect it to help you shed weight on its own - weight loss may simply be an added perk. Some studies suggest that people who have lost weight on the DASH diet have been on a calorie-controlled diet which cuts out a lot of high-fat, sugary foods, so people may find that they automatically reduce their calorie intake and lose weight. Others may have to consciously restrict their calorie intake. Either way, if you want to lose weight on the DASH diet, you'll still need to go on a calorie-reduced diet.

Other Potential Health Benefits may:

- Decrease cancer risk - a recent review indicated that people following the DASH diet had a lower risk of some cancers, including colorectal and breast cancer.
- Lower metabolic syndrome risk - some studies show the DASH diet reduces your risk of metabolic syndrome by up to 81%.
- Decrease heart disease risk - a recent review in women, following a DASH-like diet was associated with a 20% lower risk of heart disease and a 29% lower risk of stroke.

The MIND Diet

The MIND (**M**editerranean-**D**ASH **I**ntervention for **N**eurodegenerative **D**elay) diet is a comparatively new diet which, although not developed specifically for people with diabetes, may be of interest as it addresses possibly associated conditions, in this case neurodegenerative delay eg Alzheimer's Disease.

It combines the portions of the DASH diet and the Mediterranean diet both of which diet have been shown to improve cognition; however, neither were developed to slow neurodegeneration. Therefore, a team at Rush University Medical Centre worked to create the MIND diet.

Like the DASH and Mediterranean diets, the MIND diet emphasises the intake of fresh fruit, vegetables, and legumes and also includes recommendations for specific foods, like leafy greens and berries, that have been scientifically shown to slow cognitive decline. Research into the link between diabetes, diet and cognitive impairment is still in its comparative infancy but is established, so we may well hear more about this type of eating plan.



Fasting

There are lots of different types of diet that involve some form of fasting. The reasons for fasting may be health-related, social, cultural and/or religious. Fasting diets are typically short-term/temporary and while there are significant short-term benefits, the long-term effects are not really known.

People often ask if it is ok for them to fast. Ultimately, it is a personal choice whether or not to fast. However, if you do choose to fast, then it is likely that you will need to increase the frequency of blood testing and possibly change your medication regime. You should consult your doctor or healthcare team, to make sure that you are able to manage your diabetes safely. For people with diabetes there are risks associated with fasting. If you treat your diabetes with insulin or certain medications there is the danger of the blood sugar levels, after fasting, becoming too low.

This can lead to a hypo, or having your blood sugar levels too high which can lead to diabetic ketoacidosis (DKA), which would require hospital treatment. If someone is fasting and does not take in fluids to reduce their thirst, this will accelerate dehydration and they will require urgent admission to hospital.

Here are three of the more common types of fasting diet. by air

The 16/8 method – this involves fasting every day for about 16 hours and restricting your daily eating window to approximately 8 hours. Doing this method of fasting can actually be as simple as not eating anything after dinner and skipping breakfast.

For example, if you finish your last meal at 8pm and don't eat until noon the next day, you're technically fasting for 16 hours. For people who get hungry in the morning and like to eat breakfast, this method may be hard to get used to. However, many breakfast skippers instinctively eat this way.

The 5:2 diet – this involves eating what you typically eat 5 days of the week and restricting your calorie intake to 500 (women) and 600 (men) per day, for 2 days of the week. You will need to work out how many of these reduced calories come from carbohydrates. The 5:2 diet has been found to be effective at helping with weight loss.

Eat Stop Eat - this involves a 24-hour fast once or twice per week. It means fasting from dinner one day to dinner the next day, amounting to a full 24-hour fast. For example, if you finish dinner at 7pm Monday and don't eat until dinner at 7pm Tuesday, you've completed a full 24-hour fast. You can also fast from breakfast to breakfast or lunch to lunch - the end result is the same during the eating periods. In other words, you should eat the same amount of food as if you hadn't been fasting at all. The potential downside of this method is that a full 24-hour fast could be very difficult for many people with diabetes and does pose a comparatively high risk of hypoglycaemia. However, you can start with 14-16 hours and then move upward from there. Alternatively, other diets may simply be easier and safer.

Paleo Diet

This is a comparatively new dietary plan based on foods similar to what might have been eaten during the Paleolithic era, which dates from approximately 2.5 million to 10,000 years ago. This was before the advent of farming when food was gathered by hunting and gathering. Other names for a paleo diet include Paleolithic diet, Stone Age diet, hunter-gatherer diet and caveman diet.



The aim of a paleo diet is to return to a way of eating that's more like what early humans ate. The diet's reasoning is that the human body is genetically mismatched to the modern diet that emerged with farming practices, established dairy, grains and legumes as additional staples in the human diet.

According to the hypothesis, this relatively late and rapid change in diet outpaced the body's ability to adapt and this is believed to contribute to the prevalence of obesity, diabetes and heart disease today.

There are some differences between published versions of the diet but, in general, paleo diets recommend eating fruit, vegetables, nuts and seeds, lean meats and fish (especially those rich in omega-3 fatty acids). Foods to avoid include grains (such as wheat, oats and barley), legumes (such as beans, lentils, peanuts and peas), dairy products, refined sugar, salt, potatoes and highly processed foods in general. Some research has suggested that the diet, compared to a healthy, balanced diet, may provide benefits including more weight loss, improved glucose control, better blood pressure control, lower triglycerides and better appetite management.

However, longer trials with large groups of people randomly assigned to different diets are needed to understand the long-term, overall health benefits and possible risks of a paleo diet.

So, it may well be that, you might be able to achieve the same health benefits by getting enough exercise and eating a balanced, healthy diet with a lot of fruits and vegetables.



The diets we have briefly looked at here are only a few of those available

Other diets include: Acid-alkaline diet, Detox diet, Dukan diet, Gluten free diet, Juicing diet, Low calorie diet, Low fat diet, Meal replacement diet plans, Newcastle study diet, Nordic Diet, Raw food diet, South beach diet, Traditional Japanese diet, Warrior diet, Zone diet, Ornish diet, Learn diet. This list is not exhaustive!

NHS Research - Total Diet Replacement Approaches

Low Calorie Diet Programme can reverse Type 2 diabetes but....

'NHS England Obesity Research Type 2 Diabetes Prevention' is a national trial looking into total diet replacement approaches and it has identified that a low-calorie programme can help people put their Type 2 diabetes into remission.

Known as the NHS Low Calorie Diet Programme, it has also been shown to result in weight loss and a reduction in the need for medication amongst **some** people with Type 2 diabetes.

The programme is primarily for people with Type 2 diabetes who are overweight. It is accessed via referral from the GP but there are strict eligibility criteria:

- Be aged between 18 and 65 years old.
- Have a diagnosis of Type 2 diabetes within the last six years.
- Have a BMI over 27 kg/m² (where individuals are from White ethnic groups) or over 25 kg/m² (where individuals are from Black, Asian and other ethnic groups).

As part of the trial, the NHS delivered the new low-calorie diet treatment to 21 Integrated Care Systems across England and at the end of February 2022 around 3,200 people had been referred to the programme. The findings were as follows:

- Participants lost 7.2kg (15.8 pounds) on average after one month, and 13.4kg (29.5 pounds) after three months.
- Those following the Programme can keep their weight off over time.
- The trials showed that around half of people who had similar weight loss were able to achieve remission of their Type 2 diabetes after one year.

So, in around half of those who lost weight, their diabetes was reversed but this effect did not happen in the other half.

What is the total diet replacement approach used in the trial?

Here are the suggestions for eating at home or eating out:

- Swap rice for cauliflower or broccoli couscous.
- Instead of spaghetti, use spirals veg such as courgettes or butternut squash noodles.
- Replace tortilla wraps or taco shells with lettuce leaves.
- Replace pasta sheets in lasagne with sliced aubergine.
- Use portobello mushrooms as the bun when you are having a burger.
- If you have potatoes with your meals, replace them with more vegetables or try things such as celeriac mash or butternut squash wedges.
- Instead of sugar, switch to sweeteners such as Stevia, Erythritol or Xylitol which can also be used in baking.
- Replace wheat flours with low carb ones made from nuts, eg almond flour or coconut flour which work well for muffins, pancakes or baked goods.
- Cow's milk is quite high in carbs due to the sugar lactose so try coconut or almond milk.

IDDT receives reports of difficulties...

IDDT has received a few phone calls from people describing symptoms they can't understand and when described to their health team, they receive no answers. Some were never overweight and all the callers had similar difficulties:

- feeling tired,
- feeling faint after gardening or going to the supermarket,
- importantly, feeling better if they ate something sweet,
- yes, they lost weight and more weight than they needed to.

For people used to carb counting, looking at the 'diet replacement approach', it is clear that this is a very low carb diet and the people calling IDDT with the above symptoms had LOW blood sugar levels!

People entering this programme must receive support and education about the relationship between exercise, energy required and the foods that provide this energy – carbs. This raises the questions of whether a diet can be too low in carbs or whether the old restricted carb diet is better?

Reading Food Nutrition Labels

The first thing to say about reading food labels is how very difficult it is because the print is very small. The reason for this is simply because of the amount of information that is legally required to be displayed on food labels. More importantly, the second thing to say is that, for someone with diabetes, being able to understand the nutritional content of pre-packed/pre-prepared food is one of the key elements of managing the condition.

What information has to be displayed by law?

The legal requirements for food labelling are extensive and complex. However, labels must show, as a minimum, the following:

- the name of the food
- a 'best before' or 'use by' date
- any necessary warnings, for example, allergens
- net quantity information
- a list of ingredients (if there is more than 1)
- the country or place of origin, if required
- a lot number
- any special storage conditions
- instructions for use or cooking, if necessary.

A full set of the government guidance can be found here:

www.gov.uk/food-labelling-and-packaging/food-labelling-what-you-must-show

Nutrition labelling

There is a variety of nutritional information that is displayed on food labels some of this is mandatory but producers may choose to display additional information if they wish.

This information is divided into two groups, back of pack and front of pack.

Back of Pack Nutrition (BoP) Labelling

Since December 2016, it's been mandatory for the majority of pre-packed foods to display a nutrition declaration for the product. Nutrition labels must display the amount of energy (calories and kilojoules) and the amount of fat, saturated fat, carbohydrates, sugars, proteins and salt (all expressed in grams) present in 100g (or 100 ml) of the food. These items are collectively referred to as the Reference Intake (RI). In addition to these mandatory requirements, nutrition information may also be expressed per portion, provided the number of portions present in the pack is quoted.

Energy – the amount of energy in foods and drinks must be shown in kilocalories (kcal) and kilojoules (kJ). One kcal equates to 4.184 kJ. As a guide:

- the average man needs around 2,500kcal (10,500kJ) a day to maintain his weight
- the average woman needs around 2,000kcal (8,400kJ)

These amounts can vary depending on an individual's age and levels of physical activity, among other factors. For children, calorie intake will also vary depending on a number of factors - such as age and how physically active they are.

Nutrients - The fats, saturated fats, salt and sugar contained in the product are shown in grams (g) and frequently as a percentage (%) on the food label. This percentage is the amount of each nutrient that the product contributes to the recommended daily intake of each nutrient required for a healthy, balanced diet. The percentage figures are only included on a voluntary basis and be included on either the back or front of packaging as shown on the illustrations below.

RI values are based on an average-sized woman doing an average amount of physical activity. As part of a healthy balanced diet, an adults' RI for a day are:

- energy: 2,000kcal (8,400 kJ)
- total fat: 70g
- saturates: 20g
- carbohydrate: 260g
- total sugars: 90g
- protein: 50g
- salt: 6g

These values can vary from person to person, but give a useful indication of how much the average person needs.

Nutrition				
Typical values	100g contains	Each slice (typically 44g) contains	% RI*	RI* for an average adult
Energy	985kJ 235kcal	435kJ 105kcal	5%	8400kJ 2000kcal
Fat	1.5g	0.7g	1%	70g
of which saturates	0.3g	0.1g	1%	20g
Carbohydrate	45.5g	20.0g		
of which sugars	3.8g	1.7g	2%	90g
Fibre	2.8g	1.2g		
Protein	7.7g	3.4g		
Salt	1.0g	0.4g	7%	6g

This pack contains 16 servings
*Reference intake of an average adult (8400kJ / 2000kcal)

Table 1. Example of a Back of Pack nutrition label showing mandatory and voluntary RI information.

Supplementary Nutrients - Table 1 sets out the mandatory information needed for a nutrition declaration. However, information may also be provided voluntarily on some additional nutrients: As part of a healthy balanced diet, an adult’s RI for a day are:

- mono-unsaturated fats
- polyunsaturated fats
- polyols (sugar alcohols)
- starch
- fibre
- vitamins and minerals

These are the only nutrients which may be added to supplement the mandatory nutrition declaration and can be used as required. They do not all have to be included and may be chosen to suit the particular food. You will see that Table 1 includes fibre as a supplementary nutrient on a voluntary basis.

Front of Pack (FoP) Nutrition Labelling

Providing the information in Table 1 has been given, many food producers also display voluntary, FoP nutrition information using a colour-coded, traffic light labelling system to highlight the nutrition content of pre-packaged food and drink. The colours show if the product contains high, medium or low levels of energy, fat, saturates, sugars and salt.

This is to help consumers understand the information at a glance and make informed food choices and manage their diet. For an example, see Table 2 below:

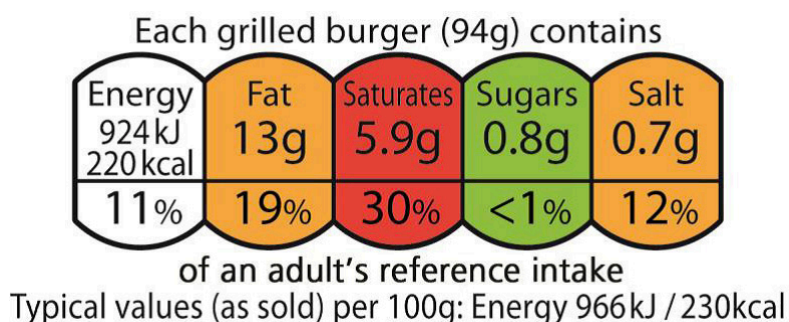


Table 2. One example of a traffic light nutrition label

Broadly speaking (remember it is only a quick glance guide):

- Red means high - red colour coding means the product is high in this nutrient and should be eaten in smaller amounts.
- Amber means medium - if a food label displays mainly amber indications, you can eat it most of the time.
- Green means low - the greener indications a label displays, the healthier the choice.
- Most labels carry a mixture of red, amber and green. Try to buy products that are a mixture of amber and greens as these are often healthier choices. However, you will see that the traffic light system only shows “sugars”, rather than “carbohydrates, including sugars”, which should be an important consideration.

Ingredients and allergens

All pre-packed products have to display a list of ingredients if there is more than one ingredient. This allows you to assess a products suitability for you. For example, if the product may contain ingredients to which you may be intolerant or allergic. Food producers must emphasise allergens within the ingredients listed on the label of pre-packed foods. To do this, they might use bold, underline, italics or change the colour of the text. There are 14 specified substances or products causing allergies or intolerances which must be highlighted:

- cereals containing gluten
- crustaceans - including prawns, crabs, lobster and crayfish
- peanuts
- eggs
- fish
- nuts - including Brazil nuts, pistachios, almonds, hazelnuts, walnuts, pecans, cashews and macadamia nuts
- soybeans
- milk
- celery and celeriac
- mustard
- sesame
- lupin
- molluscs - including clams, mussels, whelks, oysters and squid
- sulphur dioxide/sulphites (a preservative found in some dried fruit) but only when present in concentrations over 10 mg/kg or 10 mg/l

These Regulations also state that allergen information must be available for all food sold loose or pre-packed. This includes food sold from deli counters, retail outlets and food served by mass caterers in hotels, restaurants, cafes and takeaway establishments etc.

More information on mandatory nutrition labelling can be found on the Food Standards Scotland (FSS) website:

www.foodstandards.gov.scot/business-and-industry/safety-and-regulation/labelling/nutrition-labelling-requirements

The NHS website also has information on food labelling:

[www.nhsinform.scot/healthy-living/food-and-nutrition/food-packaging/food-labelling#:~:text=Nutrition%20labels%20must%20display%20the,100%20ml\)%20of%20the%20food.](http://www.nhsinform.scot/healthy-living/food-and-nutrition/food-packaging/food-labelling#:~:text=Nutrition%20labels%20must%20display%20the,100%20ml)%20of%20the%20food.)

Not All Calories are Created Equal

What are we talking about?

You should find each of the above terms on the labels of all of pre-packed or pre-prepared foods. Taken in isolation, each of the terms is relatively easy to define, however, once you start to look a little closer at the labelled content of the food, the relationship between the terms can start to become more complex and confusing.

In the UK there is a legal requirement for food producers to provide the relative amounts of carbohydrates, proteins and fats. Producers are also required to provide information on the amount of energy that is derived from each food group component and also the energy that is provided by the product as a whole.

The Food Groups

There are several different food groups that will be displayed on labelling but for the purposes of this booklet we will look at the three of the macronutrients that form the bulk of the food we eat (as opposed to micronutrients, which are vitamins and minerals that are essential but only needed in small amounts). The different types of food groups provide different amounts of energy at different rates as they are broken down into their basic components.

These macronutrients are:

Carbohydrates - carbohydrates are broken down into glucose and are the most rapidly absorbed source of energy. Simple carbohydrates (such as fructose and sucrose) are the most rapidly absorbed. Complex carbohydrates (found in potatoes, rice, pasta) take longer to be absorbed. However, both types of carbohydrate are absorbed more rapidly than either proteins or fats.

When the body doesn't need to use the glucose for energy, it stores it in the liver and muscles and is called glycogen. Carbohydrates raise blood sugar levels.



Proteins - these are broken down into amino acids. Proteins are complex molecules and the body takes longer to break them down so, they are a much slower and longer-lasting source of energy than carbohydrates. The body needs protein to maintain and replace body tissues, such as muscles and to function properly, for example by making hormones.

Common foods containing proteins are: lean meats, poultry, fish and seafood, eggs and dairy products. Protein is not usually used for energy.

However, if the body is not getting enough energy from carbohydrates or body fat, protein is broken down into ketones to be used for energy.

If more protein is consumed than is needed, the body breaks it down and stores its components as fat. Protein does not raise blood sugar levels.



Fats - fats are complex molecules composed of fatty acids and glycerol. The body needs fats for growth and energy. It also uses them to synthesize hormones and many other substances needed for the body's activities.

Because fats are such an efficient form of energy, the body stores any excess energy as fat. The body deposits excess fat in the abdomen (visceral fat) and under the skin (subcutaneous fat) to use when it needs more energy.

The metabolism of fat does not raise blood sugar levels.

Common foods containing fats are: fatty cuts of meat and meat products, butter, ghee, and lard, cheese, especially hard cheese, cream, some savoury snacks, like cheese crackers and some popcorns, biscuits, cakes, pastries and chocolate.



Energy Measurements

The macronutrient groups all supply your body with energy. This energy is released when foods are broken down during digestion. Energy enables cells to do all of their functions, including building proteins and other substances needed by the body. The energy can be used immediately or stored for use later. The energy content of food is measured in two ways:

Calories/Kilocalories – The term calorie is commonly used as shorthand for kilocalorie. You will find this written as kcal on food packets. The term “Calorie” is, arguably, the one most people are familiar with when we talk about the amount of energy we get from what we eat and drink.

Kilojoules – Kilojoules (kJ) are the equivalent of kilocalories within the International System of Units. You will see both kJ and kcal on nutrition labels. 1kcal is equivalent to approximately 4.2kJ, so, for example, a 100 gram serving of cooked pasta is 176 kcal (calories) or 745.8kJ.

So how does the weight of the food we eat translate into the energy provided?

These macronutrients supply 90% of the dry weight of our diet and 100% of our energy. All three provide energy (measured in calories), but the amount of energy in 1 gram of each differs:

- One gram of carbohydrate becomes 4 calories.
- One gram of protein becomes 4 calories.
- One gram of fat becomes 9 calories.

How does this translate into what we may actually eat? Some examples....

Below are a few, very simple examples of foods we may eat, the proportion of each of our chosen food groups they contain and the respective amounts of calories they will provide for an average or measured portion:

FOOD	FOOD GROUP(S)	CALORIE (KCAL) BREAKDOWN PER FOOD GROUP	TOTAL CALORIE (KCAL) COUNT
Porridge Oats (40 g serving)	Carbs – 24.4 g Protein – 4.1 g Fat – 2.8 g	Carbs - 97.6 kcal Protein – 16.4 kcal Fat – 25.2 kcal	145.2 kcal
Eggs (1 large)	Carbs – 0.5 g Protein – 8.3 g Fat – 5.7 g	Carbs – 2 kcal Protein – 33.2 kcal Fat – 51.3 kcal	85 kcal
Multigrain bread (per slice)	Carbs – 12.1 g Protein – 2.6 g Fat – 1 g	Carbs – 48.4 kcal Protein 10.4 kcal Fat – 9 kcal	65 kcal
Potato (Maris Piper 175 g serving)	Carbs – 27.8 g Protein – 3.2 g Fat – 0.5 g	Carbs – 111.2 kcal Protein – 12.8 kcal Fat – 4.5 kcal	131 kcal
Green Cabbage (100 g serving)	Carbs – 5.6 g Protein – 1.5 g Fat – 0.1 g	Carbs – 22.4 kcal Protein – 6 kcal Fat – 0.9 kcal	24 kcal
Chicken Fillet (skinless 150 g)	Carbs – 1 g Protein – 45.9 g Fat – 2.4 g	Carbs – 4 kcal Protein – 184 kcal Fat – 21.6	206 kcal
Apple (Braeburn, medium, each)	Carbs – 9.4 g Protein – 0.3 g Fat – 0 g	Carbs – 37.6 kcal Protein – 1.2 kcal Fat – 0 kcal	43 kcal
Vanilla Ice Cream (per 47g scoop)	Carbs – 11.2 g Protein – 1 g Fat – 2.5 g	Carbs – 44.8 kcal Protein – 4 kcal Fat – 22.5 kcal	72 kcal

*These are only rough examples and different suppliers/producers will produce varying products, so check the labels if you are shopping from different supermarkets or buying different brands.

** There will be variation in the respective proportions/measures above as we have not included some nutritional groups, such as fibre, which can impact on weights and measures.

WHAT ARE THE NHS GUIDELINES ON CALORIE INTAKE?

An ideal daily intake of calories varies depending on age, metabolism and levels of physical activity, among other things. Generally, the recommended daily calorie intake is 2,000 calories a day for women and 2,500 for men. The actual amount of energy you need will depend on:

- **Your Age** – for example, growing children and teenagers may need more energy.
- **Your Lifestyle** – for example, how active you are.
- **Your Size** – your height and weight can affect how quickly you use energy.

Other factors can also affect how much energy you burn. For example:

- **Some Hormones** (chemicals produced by the body) – such as thyroid hormones.
- **Some Medicines** – such as glucocorticoids, a type of steroid used to treat inflammation.
- **Being Unwell**

The principles of weight loss and weight loss for people with diabetes

For people with Type 2 diabetes one of the first things they are often advised to do is to lose weight. There are several reasons for this. Just a 10% reduction in your body weight will increase the likelihood that:

- Your blood glucose levels will drop and you will need less or no medication as a result.
- Your blood pressure will reduce.
- Your cholesterol levels will fall.

In theory, losing weight is easy. If you eat fewer calories than you use up, then you will lose weight. As we have said, on average, a woman needs 2000 calories per day and a man 2500 calories a day. If you reduce your calorie intake by 500 calories a day then you should lose around half a kilo (about a pound) a week. You will lose more energy if you take extra exercise, such as walking, gardening, swimming, housework or cleaning the car.

Unfortunately, in reality, losing weight is not easy and keeping the weight off is harder still. There are several things you can do to help you lose weight and these involve some simple lifestyle changes. It is a good idea to make these changes one at a time, at your own pace so that you can feel that you have mastered each change before moving on to the next.

Here are some tips as to how you can change your eating habits so that you can lose excess weight:

- Eat more slowly to make the meal last.
- Try eating from a smaller plate - it makes it look as if you have more food.
- Fill your plate with vegetables or salad.
- Try to cook tasty, low-calorie foods that can be shared by the rest of the household so you won't feel left out.
- Don't feel you have to clean your plate - stop eating when you have had enough.
- Set realistic targets for losing weight - don't set yourself up to fail by being over-ambitious.
- Allow yourself the occasional treat to avoid getting bored or frustrated with your diet.
- Be wary of the hidden calories in things like salad dressing and sauces.
- Make a shopping list before going to the supermarket and stick strictly to the list.

IDDT does not advocate any particular diet to lose weight. We would recommend that you choose a diet that suits your individual lifestyle and that of those around you, which supports your goal to lose weight but is realistic and sustainable.

Diabetes and Carbohydrates

Carbohydrates are sugars and starches – bread, potatoes, rice, pasta, cereals and sugars. They provide the energy our bodies need for its various activities. Energy is also supplied by fats we eat.

What happens to the carbohydrates we eat? In people without diabetes:

- When we eat, beta cells in the pancreas produce insulin, a hormone which controls the glucose levels in the blood.
- The pancreas produces the right amount of insulin for the amount of carbohydrates we have eaten and this keeps the level of glucose in the blood within the normal range.
- The carbohydrates eaten are converted into glucose which then goes into the blood and is carried around in the blood vessel system. It is taken to all parts of the body to provide energy wherever it is needed. Glucose is fast acting and always present in the blood.



- If we have eaten more carbohydrates than we need for energy at a particular time, then the excess glucose is stored in the liver. This is used for emergencies such as extra physical activity, or occasions when the blood glucose levels drop unexpectedly, such as times of fear.

What happens in people with Type 1 diabetes?

- In people with Type 1 diabetes, the beta cells in the pancreas cannot produce insulin. When carbohydrates are eaten, no insulin is produced and so the glucose levels in the blood rise higher and higher.
- The body cannot cope with this so the excess glucose is passed through the body into the urine. This means that people with untreated diabetes pee a lot to get rid of the excess glucose which in turn, makes them thirsty because the body gets dehydrated. These are the classic signs of undiagnosed diabetes – thirst and going to the toilet a lot.
- The body becomes short of energy as a result of the glucose being excreted and the person feels tired. The body starts to burn fats to provide the necessary energy and there is weight loss. Treatment is essential at this stage and it is often an acute emergency situation.

Treatment of Type 1 diabetes

As the body does not produce its own insulin, the treatment of Type 1 diabetes is always giving insulin by injections. If insulin is given by injections, then the insulin is given in regular doses and not in response to the carbohydrates eaten so the insulin has to be balanced with the amount of food eaten, the level of activity and blood glucose levels. If insulin is given by pump therapy, then boluses are given in response to the food eaten, activity levels and blood glucose levels.

What happens in people with Type 2 diabetes?

- In Type 2 diabetes, the body either does not produce enough insulin or the insulin produced cannot be used properly by the body (insulin resistance). So, when carbohydrates are eaten, the levels of glucose in the blood rise.
- As some insulin is produced, usually the blood glucose levels do not rise as high as in Type 1 diabetes and so there may be no symptoms for many years and Type 2 diabetes can remain undiagnosed.

Treatment of Type 2 diabetes

Initially this could be diet only, diet and tablets and if this does not keep the blood glucose levels sufficiently low, then insulin treatment becomes necessary. There are different types of tablets that either increase the body's sensitivity to insulin so that it is used more effectively or stimulate the pancreas to produce more insulin. More recently, injectable drugs have been introduced to treat Type 2 diabetes but it is important to know that these are NOT insulin.

Different types of carbohydrate

Quick-acting carbohydrates

Some carbohydrates are quick acting eg sweet foods such as cakes, puddings, chocolate. Sugary foods will raise blood sugars more quickly and higher in people with diabetes and more insulin or medication may be necessary. Sugary carbohydrates tend not to last as long in the body so blood sugars may drop before the next meal. Sugary carbohydrates tend to make blood glucose levels peak and trough.

Some foods, especially those that are pre-prepared ready meals, contain sugars so it is important to look at the packets to check for 'hidden' sugars.

Slow-acting carbohydrates

Some carbohydrates are slower acting and last longer eg bread, potatoes and high fibre cereals. These carbohydrates do not raise the blood sugars as quickly or as high after eating. They last longer and therefore tend to give more even blood glucose levels. The amount of insulin, or in Type 2 diabetes, medication needed may be less if sugary foods are avoided and the diet is made up of slower and longer-acting carbohydrates.

For people with diabetes, the slower acting carbohydrates are better because they last longer and do not give sharp rises in blood glucose levels.

Measurement of blood glucose levels

Regular measurement of glucose levels is the way people with diabetes know what is happening to their sugars and whether they need to make any adjustments to their food intake or insulin dosing.

Normal blood glucose levels in someone WITHOUT diabetes are between 4 and 7mmols/l (42 to 48mmols/mol). Most people with diabetes are encouraged to try to keep their blood glucose levels as near to normal as possible but it is important that individual target blood sugar levels are set for each person.

High blood glucose levels (hyperglycaemia)

Blood glucose levels that are too high can occur for several reasons:

- If there is not enough insulin for the amount of carbohydrate eaten.
- If the amount of exercise is less than normal and so the glucose in the blood is not used up.
- When there is an illness, cold or 'flu. They often rise before an illness so high sugars can be a sign that a cold or illness is 'brewing'.
- Stress.
- Sometimes for no apparent reason at all!

High blood sugars can and do occur and the odd high is not unusual. The symptoms and signs of more prolonged high blood glucose levels are similar to those of the undiagnosed state, although not usually as severe unless the highs are present for some days. If this is the case and blood sugar readings are high for a prolonged period, then medical advice is necessary. Many people with diabetes treated with insulin will increase their dose of insulin to deal with this situation, without consulting the doctor or nurse.

Low blood glucose levels (hypoglycaemia)

This is when the blood sugar levels are too low. For whatever reason, there is too much insulin present for the amount of food eaten and this situation needs treatment immediately with a sugary drink, sugary food or glucose tablets. Hypoglycaemia (often referred to as a hypo) occurs for several reasons:

- The amount of insulin given was too great.
- Extra energy has been used by extra activity without eating extra food. The glucose in the blood has been used up and so it drops below normal.
- Fear anxiety, excitement, stress and various emotions.
- Alcohol causes blood glucose to fall and this can occur for up to 24 to 48 hours after the alcohol consumption.
- For no apparent reason at all!

It is important to recognise that hypoglycaemia is caused by the treatment of diabetes and not by diabetes itself. People taking insulin are at risk of hypoglycaemia. In Type 2 diabetes with the exception of metformin, all other medications for the treatment of Type 2 diabetes can cause hypos.

Note: For further information about hypoglycaemia, IDDT has a FREE booklet 'Hypoglycaemia' and if you would like a copy, contact IDDT using the details at the end of this booklet.

Diabetes and Fats

Watching the fats we eat is a very important part of healthy eating in reducing the risks of heart disease and keeping blood cholesterol levels down. As people with diabetes have an increased risk of heart disease, it is particularly important to understand about the fats in our diet.

Fats provide some of the energy our bodies need. Guidelines recommend that we should eat less fat, especially saturated fat in order to reduce this risk of heart disease. This can best be achieved by eating a varied diet with plenty of fruit, vegetables, whole grain cereals, pasta, rice and potatoes.

What is fat?

- Fats come in both solid and liquid forms – solid fats include butter, lard and the fat visible on meat. Liquid fats include sunflower, corn and olive oils.
- Fats can also be divided into visible and invisible fats. Visible fats, such as butter and the fat on meat are easy to spot and cut out but invisible fats, such as those in cakes, biscuits, dairy foods like cheese and fried foods are more difficult to see and we may not even be aware that they are present in some foods.
- Fats can also be divided into four types – polyunsaturated fats, saturated and trans and monounsaturated fats.



Polyunsaturated fat – comes mainly from vegetable sources such as sunflower oil or seeds and is also found in oily fish such as mackerel or sardines. There are two different groups of polyunsaturates containing fatty acids that are essential to our health and they must be obtained through the diet we eat because the body cannot make them. Polyunsaturates found in the oils can reduce blood cholesterol levels. Those found in oily fish appear to have no effect on blood cholesterol but they do make the blood less 'sticky' which in turn, makes the blood less likely to clot and block the blood flow to the heart.

Saturated fat – is found in foods from animals such as meat, cheese, butter and cream. Many baked goods such as cakes, biscuits and pastries are also high in saturated fats. Excessive intake of these fats can increase the 'bad' cholesterol levels (LDL) and heart disease.

Trans fats – also called 'hidden fats' or 'trans fatty acids', behave in a very similar way to saturated fats and they too have been linked to raised 'bad' cholesterol levels (LDL) and heart disease. They are made from vegetable oil and are used in convenience foods but also occur naturally in some dairy products and in beef and lamb. Just one gram of trans fats a day can increase the risk of heart disease. Trans fats have been cut out of many well-known food brands.

Monounsaturated fat – this is found in significant amounts in most types of nuts, oily fish, avocados and olive oil. It does not raise blood cholesterol and there is some evidence to show that it may also help to reduce cholesterol levels.

Diabetes and Salt

Why do we need salt and how much do we need?

You should have no more than 6g of salt a day. For the purposes of this booklet by salt we mean sodium chloride or table salt. On average, people in the UK eat approximately 8g of salt a day, which is much more than the body needs.

Over the past few years, our daily consumption of salt has dropped but we're still consuming more than the 6g (approximately 1 tsp) recommended for adults. That figure is even lower for children and below are the recommended salt intake for children:

Age	Maximum Salt Intake
1-3 years	2g / day
4-6 years	3g / day
7-10 years	5g / day
11 years and above	6g / day



Salt is necessary to help regulate fluid levels and aid digestion whether you have diabetes or not but people with diabetes need to take some extra care. Although salt does not affect blood glucose levels, it is important to limit the amount you eat as part of your diabetes management. Too much salt can raise your blood pressure and people with diabetes are more likely to be affected by high blood pressure, which increases the risk of heart disease, stroke and kidney disease.

Being aware of the sources of added salt and following a few simple steps you can easily reduce the amount of salt you eat.

The main sources of salt:

- processed food, such as ready meals and takeaways
- salty meats, such as ham, bacon and sausages
- salted snacks, such as crisps, popcorn, salted nuts and biscuits
- stock cubes, gravy powder and soy sauce
- cheese
- prawns, smoked fish and anchovies
- ketchup, mayonnaise, pickles
- bread and breakfast cereals
- canned, jarred foods in brine
- canned, packet and instant soups
- ready-filled sandwiches

All of these foods contain comparatively high levels of salt, so here are a few tips to help you reduce your salt intake.

Top tips to reduce your salt intake

- Reduce the amount you use in cooking and measure what you add instead of just shaking the salt cellar over the pan! As your taste buds adapt to less salt, aim to cut it out completely.
- Don't add salt to food you've cooked or are served in a restaurant until you've tasted it – probably something we are all guilty of – and even better, flavour your food with herbs and spices instead of using the salt shaker. Often, we sprinkle salt on food out of habit more than need.
- Instead of buying processed food, cook from scratch, using fresh fruit and vegetables, milk, potatoes, rice and pulses, which are generally low in salt.
- We lead busy lives, so there will be occasions when we turn to ready meals, but try not to buy them too often and look at the 'front of pack' label. Choose foods where labelling is green or amber for salt, rather than red.

- When shopping, look out for reduced-salt options of your favourite foods. You can now buy reduced-salt ketchup, baked beans and even soy sauce. Check out the tins for salt content and shop around comparing brands for salt content. For example, for tinned fish, beans and vegetables choose canned in spring water instead of brine.

Salt Alternatives

- Rock or sea salt is often promoted as being natural and healthy. These more expensive salts are effectively no different to standard salt and still add unnecessary sodium chloride to your diet.
- Some people use reduced-sodium salt. These have had the sodium replaced by potassium, which reduces the sodium salt content but if you have kidney disease too much potassium can be unsafe, so speak to your healthcare team first before you use it.

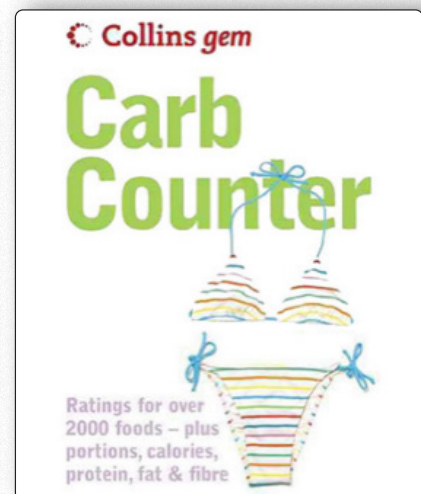
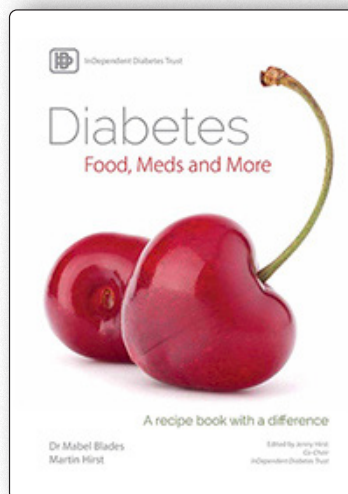
Contact IDDT

If you found this booklet of interest and would like to know more, IDDT produce a FREE booklet "Diabetes – Everyday Eating" that provides a wide range of information and advice about diabetes and eating and also has a four-week menu plan.

To obtain your FREE copy simply contact IDDT using the details at the end of this booklet or download it at:

www.iddt.org/wp-content/uploads/2011/10/A4_Health_Nutrition_Booklet.pdf?x13474

Available to purchase
from the IDDT Shop
are:



InDependent Diabetes Trust
PO Box 294, Northampton, NN1 4XS

Tel: 01604 622837
email: enquiries@iddtinternational.org
Website: www.iddt.org

Eating Disorders and Disordered Eating

In 2021, NHS Digital data showed that hospital admissions for eating disorders rose by almost a third (32%) in recent years, with 21,794 admissions in 2019 to 2020. During lockdown, the Royal College of Psychiatrists found that the average number of referrals for eating disorders increased by 20% from March 2020 to November 2020, while waiting times for treatment had more than doubled from 33 days to 67 days.

Beat, the charity for people with eating disorders, has stated that the calls to their helpline increased by 300% during lockdown.

A new report by the government's Women and Equalities Select Committee has called for an overhaul of the government's obesity strategy and describes the government's Obesity Strategy, as "at best ineffective and at worst perpetuating unhealthy behaviours".

It also calls for a ban on the use of altered images in adverts which some believe have a detrimental effect on people struggling with body issues. In addition, the report found just 96p per person is spent on research into eating disorders compared to £9 per person for mental health issues overall.

Let's take a look at eating disorders, disordered eating and diabulimia

Eating disorders describe illnesses that are characterised by irregular eating habits and severe distress or concern about body weight, body image or shape. This may include inadequate or excessive food intake which can ultimately damage the person's health and wellbeing. The most common forms of eating disorders are Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder and affect both females and males.

Anorexia Nervosa

Typically, this is where people have an obsessive fear of gaining weight, refusal to maintain a healthy body weight and an unrealistic perception of body image. Many people with anorexia will fiercely limit the quantity of food they eat and view themselves as overweight, even when they are clearly underweight. Anorexia can have damaging health effects, such as brain damage, multi-organ failure, heart difficulties among others.

Bulimia Nervosa

This eating disorder is where repeated binge eating is followed by behaviour that compensates for the overeating, such as forced vomiting, excessive exercise, or extreme use of laxatives or diuretics. People with this condition may fear weight gain and feel severely unhappy with their body size and shape. The binge eating and purging cycle is typically done in secret, creating feelings of shame, guilt and lack of control. Bulimia can cause health problems, such as gastrointestinal problems, severe dehydration and heart difficulties.

Binge Eating Disorder

People with this disorder will frequently lose control over their eating. It is different from bulimia because episodes of binge eating are not followed by purging, fasting or excessive exercise to compensate for the overeating.

Therefore, many people with this condition may be obese and at an increased risk of developing other conditions, such as cardiovascular disease or Type 2 diabetes. They may also experience intense feelings of guilt, distress and embarrassment related to their binge eating.

Disordered Eating

The above eating disorders have narrow definitions with specific signs and symptoms but it is possible to have disordered eating patterns that do not fit into these defined patterns and so are often referred to as 'disordered eating'. This describes a situation and is not a diagnosis. However, there are serious health concerns which may be difficult to detect because the person may not display all of the classic symptoms typical of eating disorders. In addition, a person with disordered eating habits may also be experiencing significant physical, emotional and mental stress, which they themselves may not fully recognise.

A small study in women with Type 1 diabetes and disordered eating showed:

- They spend 4 times longer hyperglycaemic (blood sugars greater than 13.9mmol/L) than women with Type 1 diabetes without disordered eating.
- They also experience more negative emotions, physical symptoms and greater glucose variability.
- Their HbA1cs were higher as were their levels of diabetes distress and depression.
- Women with Type 1 diabetes are close to 2.5 times more likely to develop disordered eating compared with women without Type 1 diabetes.

Disordered eating in Type 1 diabetes represents a major risk factor for developing diabetes complications earlier in life and in disease duration. (Diabetes Medicine, December 2020)

Causes of disordered eating and eating disorders

The exact cause of eating disorders is not known but it is thought to be a combination of the following:

Biological factors

- Irregular hormone functions.
- Genetics (being researched).
- Nutritional deficiencies.

Psychological factors such as:

- Negative body image.
- Low self-esteem.

Environmental factors such as:

- Dysfunctional family dynamic.
- Professions and careers that promote being thin and weight loss, eg ballet and modelling.
- Sports where an emphasis is placed on maintaining a lean body for enhanced performance, eg rowing, diving, long distance running.
- Family and childhood traumas - childhood sexual abuse, severe trauma.
- Cultural and/or peer pressure among friends and co-workers.
- Stressful transitions or life changes.

Treatment options

There is still a lot of debate about how best to treat people with eating disorders and this often depends on the severity of the condition but they involve (i) nutrition, restoring weight and a meal plan, (ii) different forms of psychotherapy, individual and/or family to address the underlying causes, (iii) medication, some may help with mood or anxiety. Having said this, eating disorders are classed as a mental health issue and the availability of treatment in the UK is not good.

Diabulimia

Diabulimia is not a medical term but was made up by the media and the diabetic community because it is an eating disorder that only affects people with Type 1 diabetes, both males and females. It is when people deliberately reduce their insulin dose or don't take any insulin in order to lose weight. It is estimated that around 4 out of 10 women, aged 15 to 30, take less insulin to lose weight and in young men, it is around 1 out of 10.

Research also shows that men with diabetes are more worried about their weight than men without diabetes. As we all know, people with Type 1 diabetes should never stop taking insulin, so the consequences of diabulimia are serious, can cause the complications of diabetes and can be life threatening.

Insulin treatment does tend to increase weight which can be frustrating because maintaining a healthy weight is an important part of the management of Type 1 diabetes. However, without insulin, blood sugar levels build up quickly (hyperglycaemia). People start going to the toilet a lot and any calories eaten pass straight through and out of the body in the urine. As a result of this, the body does not get the energy needed from food so the body starts to break down body fat to provide energy and this leads to dramatic weight loss. In addition, if there is no insulin or enough insulin, your blood sugar levels will not come down which can lead to diabetic ketoacidosis (DKA), a dangerous condition which many people experience before they are diagnosed.

Causes of diabulimia

There are many reasons why diabulimia may develop and often there is not one single cause. Like other eating disorders, it may be a combination of physical, social and mental health problems. It also must be remembered that in Type 1 diabetes, some of the things needed to manage it can play a part in triggering diabulimia, such as:

- The focus on your weight when you go to the clinic.
- Having difficulty keeping to a healthy weight.
- Having to eat to treat hypos, which can cause weight gain.
- Having to be constantly aware of carbohydrates or calories in food and having to read food labels.
- Feeling ashamed about how you manage your diabetes.

Treatment

Diabulimia is not recognised as a mental illness and is not widely understood so healthcare professionals may not recognise the signs or know how to support someone with the condition. In addition, like all eating disorders, people with them find it difficult to talk about them and get the help they need.

However, diabetes teams, GPs and eating disorder specialists are becoming more aware of diabulimia and some dedicated recovery programmes are now available in the UK, so people could be referred to an eating disorder clinic or a counsellor for specialist care. Talking about the problem is difficult because it means facing up to the problems but as a start, try speaking to someone you trust and who will want to help you and perhaps go to the doctors with you – a friend, a parent or sibling or a healthcare professional.

It is important to remember that you are not alone with the problems, research in 1994 found that up to 30% of women will stop taking their insulin at some point in their lives, to lose weight. The research at that time, didn't look at men as eating disorders were thought to only affect women, now known not to be true.



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For further information about
all our FREE leaflets contact us:

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who live with diabetes*

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