

Obesity and weight loss

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✓ Meets Patient's **editorial guidelines**

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If you have obesity or overweight, you have an increased risk of developing various health problems, including cancer, diabetes and heart disease. Even a modest amount of weight loss can help to reduce your increased health risks. The best chance of losing weight and keeping the weight off, is to be committed to a change in lifestyle. This includes eating a healthy diet and doing some regular physical activity.

At a glance

- Obesity means carrying excess body fat, which increases your risk of various health problems.
- Your Body Mass Index (BMI) and waist circumference can help tell if you have obesity.
- Health risks from obesity include type 2 diabetes, heart disease, stroke, and certain cancers.
- Lifestyle changes, medication, or surgery can help with weight loss.
- Losing just 5–10% of your body weight can significantly improve your health.
- Speak to your doctor or practice nurse if you are concerned about your weight.

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What is obesity?

Obesity is the medical term for being very overweight. If you have obesity or overweight, this means that you are carrying excess body fat. Having overweight or obesity is not just about how you look. Over time, it means that you have an increased risk of developing various health problems.

How to tell if you have obesity

As an adult, you can find out whether you have overweight or obesity and whether your health may be at risk, by calculating your body mass index (BMI) and measuring your waist circumference. For children, **see the separate leaflet called Childhood obesity**.

Body mass index (BMI)

BMI is used by healthcare professionals to assess if someone's weight is putting their health at risk. It is a measure of your weight related to your height.

To calculate your BMI, you divide your weight (in kilograms) by the square of your height (in metres). So, for example, if you weigh 70 kg and are 1.75 metres tall, your BMI is $70 / (1.75 \times 1.75)$, which is 22.9.

If you do not have scales at home, your practice nurse can measure your height, weigh you and **calculate your BMI**.

There are different categories of obesity as follows:

- Ideal (normal) BMI is 18.5 to 24.9 kg/m².
- A BMI of 25–29.9 kg/m² is overweight.
- A BMI of 30–34.9 kg/m² is obese (Grade I).
- A BMI of 35–39.9 kg/m² is obese (Grade II).
- A BMI of ≥ 40 kg/m² is obese (Grade III) or morbidly obese.

The more overweight you are, the more the risk to your health. For people with obesity (Grade III), weight is a serious and imminent threat to health. Broadly, the health risks increase the higher the BMI. However, for those who have overweight or obesity



(Grade I), waist circumference is also taken into account to calculate the risk to health.

On the whole, BMI is a good estimate of how much of your body is made up of fat. However, BMI may be less accurate in very muscular people. This is because muscle weighs heavier than fat. So, someone who is very muscular may have a relatively high BMI due to the weight of their muscle bulk but actually have a proportionally low and healthy amount of body fat.

Standard BMI measurements also can't be used in people who have had amputations

In some people, particularly people from South Asian, Chinese, other Asian, Middle Eastern, Black African or African-Caribbean ethnic backgrounds, health risks start at lower BMI measurements (about 2.5 kg/m² less than those given above). The relationship between health risks and BMI is also more complicated in older people.

Waist-to-height ratio

We know that *where* you carry fat is also important. Fat around the tummy (abdomen) is closely linked with health risks. Measuring the height-to-weight ratio gives an indication of how much of this fat is present, and can also give extra information about your risk of developing health problems (particularly **cardiovascular disease** and **type 2 diabetes**). This can be particularly useful in people with a BMI lower than 35 kg/m², and also in people with high muscle mass, where BMI is less reliable.

The waist to height ratio is calculated by:

- Measuring your waist. This should be done by using a tape measure, wrapped around your waist at the level of your belly button.
- Measuring your height.
- Dividing your waist measurement by your height measurement. (You can use either inches or centimetres, as long as you use the same for both measurements.)

A waist-to-height ratio of 0.4 to 0.49 is healthy. A waist-to-height ratio between 0.5 to 0.59 indicates increased health risks, and above 0.6 indicates even higher health risks.



You should try to keep your waist circumference to less than half of your height – which is a waist-to-height ratio of 0.5 or less.

For people with overweight, or obesity (Grade I), waist circumference is taken into account with BMI when assessing health risk. If you have a very high waist circumference, you may have a very high level of risk to your health even at the lower grades of obesity. If you have other medical conditions such as **diabetes**, **high blood pressure**, **high cholesterol levels**, or **coronary heart disease**, your risks are even higher. Weight loss is even more crucial.

What are the health risks of obesity?

If you have obesity or overweight, from day to day you may:

- Feel tired and lacking in energy.
- Experience breathing problems (for example, shortness of breath when moving around, or not being able to cope with sudden bursts of physical activity like running across the road).
- Feel that you sweat a lot compared with other people.
- Develop skin irritation, particularly if you have folds of skin that touch each other or rub together.
- Have difficulty sleeping.
- Get complaints from your partner that you snore.
- Experience back and joint pains which can affect your mobility.

You may also have an increased risk of developing:

- **Impaired glucose tolerance** (pre-diabetes).
- **Type 2 diabetes**.
- **High cholesterol or triglyceride levels**.
- **High blood pressure**.
- **Coronary heart disease**.



- **Stroke.**
- **Sleep apnoea** (this happens when your breathing patterns are disturbed while you are sleeping, due to excess weight around your chest, neck and airways).
- **Fertility problems.**
- **Polycystic ovary syndrome.**
- Complications in pregnancy (including an increased risk of **high blood pressure during pregnancy**, diabetes during pregnancy, **premature labour**, caesarean section).
- **Stress incontinence** (leaking urine when you are, for example, laughing, coughing, etc).
- **Gallstones.**
- **Heartburn (gastro-oesophageal reflux).**
- Many cancers, including **kidney, colon, breast and womb (endometrial) cancer.**
- **Gout.**
- **Fatty liver.**
- **Chronic kidney disease.**
- **Difficulty maintaining an erection (erectile dysfunction).**
- **Asthma.**

Many people can also develop psychological problems because of having overweight or obesity. For example: low self-esteem; not liking how you look (poor self-image); low confidence; feelings of isolation. These feelings may affect your relationships with family members and friends and, if they become severe, may lead to depression.

Having obesity can also affect your overall life expectancy: you are more likely to die at a younger age. An analysis of all relevant studies in 2014 showed that you are significantly more likely to die younger if you have a BMI of 35 or more.

Another analysis showed that if you are a woman with a BMI of 30 or more at the age of 40, you are likely to die 7.1 years earlier than average. If you are a man with a BMI of 30 or more at the age of 40, you are likely to die 5.8 years earlier than average. If you



smoke as well, your life expectancy is reduced even further.

How many people have obesity in the UK?

Obesity and being overweight are common. According to 2021 government reports, in England:

- 59 out of every 100 women had overweight or obesity.
- 69 out of every 100 men were overweight or obesity.

This means most people in England have overweight or obesity. Figures in the rest of the UK are similar. The UK now has the highest rate of obesity in Western Europe. The number of people with obesity in the UK has been rising rapidly over a period of 30 years. This has been called the obesity epidemic. It is estimated that obesity costs the NHS over £6.1 billion every year.

Causes of obesity

In some respects, the cause sounds quite simple. Your weight depends on how much energy you take in (the calories in food and drink) and how much energy your body uses (burns) up:

- If the amount of calories that you eat equals the amount of energy that your body uses up, your weight remains stable.
- If you eat more calories than you burn up, you put on weight. The excess energy is converted into fat and stored in your body.
- If you eat fewer calories than you burn up, you lose weight. Your body has to tap into its fat stores to get the extra energy it needs.

However, there is increasing evidence that this explanation, sometimes called the calories-in/calories-out model, is outdated. Research shows that there are many complex interactions that go on inside the body that work together to keep body weight the same. These interactions involve connections between the nerves and the brain and several hormones, including insulin. The medical term for this is homeostatic feedback. For example:



- If you eat fewer calories, not only does this make you hungry but it also reduces the amount of energy that your body uses, that is, eating less makes you less active.
- If you exercise, this is followed by a period of increased hunger, that is, doing more makes you eat more. Exercise also makes you tired, so you reduce the amount of energy your body uses later on.
- If you eat more calories, this increases the amount of energy your body uses, that is, eating more may make you more active.

In other words the body adjusts how much energy you use up depending on how many calories you eat.

What seems to be important in making us obese is that particular foods can easily over-ride these natural feedback mechanisms for keeping us the same weight. High-sugar and high-fat foods taste great and give us pleasure; by triggering the 'reward' centre in our brain, they may be especially good at over-riding these controls. Ultra-processed foods tend to be high-fat and high-sugar and have been linked to obesity.

Foods can be divided into three types (although most foods are a mixture):

- Carbohydrates:
 - Found mainly in fruit, vegetables, beans, grains and milk.
 - 'Refined carbohydrates' are carbohydrates that have been processed in some way, such as table sugar (sucrose), high-fructose corn syrup (found in many processed foods), white flour, and pasta.
- Fats: found in, for example, animal fat, oily fish, butter, cheese, and vegetable oils.
- Proteins: found in meat, fish, eggs, beans, nuts, and meat alternatives.

Refined carbohydrates, fructose and sugar-sweetened drinks have been linked with low levels of feeling full (satiety), difficulty controlling our appetite and a lack of excess energy to make up for the extra calories consumed.



How much you eat and drink

Most people in the UK live where tasty food can be found at almost any time of day or night. Many of the foods that people eat are those higher in calories (particularly fatty and sugary foods), so-called energy-dense foods. Although your body gives you a feeling of fullness after eating enough (satiety), you can easily ignore this feeling if you are enjoying tasty foods. Food portion sizes in general have increased.

There has also been a tendency to eat out more over recent years. If you eat out, you are more likely to eat food that is more energy-dense than you would eat at home. The amount of processed foods and ready-made meals available has also increased in response to our busy lives. These are often foods that are more energy-dense as well. However, even healthy foods contain calories and can tip the energy balance if we eat too much of them.

What you drink is also important. Alcohol and sugary drinks contain a lot of calories. Even fresh fruit juices that you may think are healthy can contribute to weight gain. This is thought to be due to the quick release of sugar that they give because the fibre naturally found in fruits is destroyed by juicing them.

Your physical activity levels

Most people in the UK do not do enough physical activity. A lack of physical activity by many people is thought to be a major cause of the increase in obesity in recent years.

There is no doubt that exercise is good for us; it lowers our risks of heart disease and stroke, amongst others. However, there is debate, that unless we are doing a lot of exercise it may not always help with getting to a healthy weight.

Emotional eating

Many of us eat not because we *need* nutrition, but because of other things that we feel. For example, people might eat because they are feeling happy, or excited, or because they are bored, or upset. We sometimes use food as a reward or comfort, like ordering a takeaway at the end of a tough week. And for some people, eating is a way of coping with negative emotions, such as shame or sadness.

This usually leads to us eating more than we actually need, which can lead to weight gain.



Is obesity genetic?

You are more likely to have obesity if one of your parents has obesity, or both of your parents have obesity. This may partly be due to learning bad eating habits from your parents. But, some people inherit a tendency in their genes that makes them prone to overeat. So, for some people, part of the problem is genetic.

However, if you do inherit a tendency to overeat, it is not inevitable that you will have overweight or obesity. You can learn about the power of your appetite, and ways to resist it and be strict on what you eat. But you are likely to struggle more than most people where your weight is concerned. You may find it more difficult to stop yourself from gaining weight or to lose weight.

Scientists have started to identify genes which may be involved in obesity. This may help them find effective treatments in the future.

Medical problems

Very few people with obesity have a 'medical' cause for their obesity. For example, health conditions such as Cushing's syndrome and an underactive thyroid gland are rare causes of weight gain, until they are treated. Women with polycystic ovary syndrome may also have overweight or obesity. (See the separate leaflets called **Cushing's syndrome, Underactive thyroid gland (Hypothyroidism)** and **Polycystic ovary syndrome** for further details on these conditions.)

Some medicines such as **steroids**, some antidepressants, some **treatments for epilepsy** and diabetes, and the **contraceptive injection** may contribute to weight gain. If you give up smoking, your appetite may increase and, as a result, you may put on weight. People with low mood or depression may also have a tendency to eat more energy-dense 'comfort' foods and so gain weight.

What are the benefits of losing weight?

It is difficult to measure how much quality of life is improved if you lose some weight. Many people feel better and have more energy. Some people notice an improvement in their self-esteem. But there are also definite health benefits from losing some weight.

What is more, if your BMI is between 25 and 35, much of the health benefits come with losing the first 5–10% of your weight. (For example, if you weigh 90 kg and you lose 9 kg, this would be 10% of your original weight.) If your BMI is between 25 and 35



on average, if you reduce your weight by 10%:

- You are much less likely to develop the health problems listed above, such as diabetes.
- If you already have problems such as high blood pressure, high cholesterol, osteoarthritis, or diabetes, these are likely to improve. If you are taking medication for these problems, you may be able to take a reduced dose.
- Your chance of dying at any given age is reduced. This is mainly because you are less likely to die from heart disease, stroke, diabetes, or obesity-related cancers.

If your BMI is more than 35, you are more likely already to have health problems related to being overweight. You will probably need to lose between 15–20% of your original weight to have sustained improvements in these health problems and other health benefits.

How do I know if my weight is already affecting my health?

If you are worried that you have overweight or obesity, you should discuss this with your practice nurse or doctor. They may be able to determine if your weight is already affecting your health.

For example, they may start by checking whether you have any symptoms of **coronary heart disease** such as chest pains, particularly on exertion. They may also ask about any symptoms of **osteoarthritis** such as back pain or joint pains, or any symptoms of **sleep apnoea**. This happens when your breathing patterns are disturbed while you are sleeping, due to excess weight around your chest, neck and airways.

They may suggest some tests to screen for any underlying health problems that may be caused by your weight. For example, they may suggest:

- A blood test for **type 2 diabetes**.
- A blood test to look at your cholesterol and triglyceride levels.
- A blood pressure check.



Other blood tests are sometimes suggested to look for other problems such as an **underactive thyroid gland** or **liver problems**.

As mentioned above, quite often it can also be the case that if someone has overweight or obesity, this can lead to psychological problems. So, your doctor or nurse may also ask you questions to look for any signs of these.

Note: your doctor or practice nurse may also be a source of help if you would like to lose weight (see below).

What can help with weight loss?

Some people lose weight with a strict diet and exercise regime for a short period. However, as soon as their diet is over, they often go back to their old eating habits and their weight goes straight back on. Losing weight and then keeping it off need a change in your lifestyle for life. This includes such things as:

- The type of food and drink that you normally buy.
- The type of meals that you eat.
- Your pattern of eating.
- The amount of physical activity that you do.

See the separate leaflet called [Weight loss \(Weight reduction\)](#) for more details. Below is a brief summary of the principles in losing weight.

Tips for weight loss

Motivation is crucial

No weight loss plan will work unless you have a serious desire to lose weight. You need to be ready and motivated.

Monitor your current food intake

It is helpful to know exactly how much you currently eat. Keeping a detailed diary of everything that you eat and drink over an average week is more helpful.



Aim to lose weight gradually

It is best not to lose weight too fast. Aim to lose an average of 0.5 to 1 kg per week (about 1–2 lb per week).

Set clear goals with a realistic timescale

It is important to set a clear and realistic weight loss goal. As mentioned above, in most cases, health benefits can be gained from losing the first 5–10% of your weight.

Aim to eat a healthy balanced diet

Special diets which are often advertised are not usually helpful. This is because after losing weight, if your old eating habits remain, the weight often goes straight back on. It is usually not a special diet that is needed but changing to a healthy balanced diet, for good.

You will find a lot more information about this in the separate leaflet called **Healthy eating**. You can also read about the **Mediterranean Diet** which is increasingly being recommended to prevent **cardiovascular disease**.

Be careful about what you drink

Many people drink sweet drinks to quench their thirst when all they really need is water. Sugary drinks such as cola, tea and coffee with milk and sugar, milk, fruit juices, and alcoholic drinks, all contain calories. One of the easiest ways to cut back on calories is simply to drink water as your main drink.

Increase your physical activity levels

Ideally all adults should aim for two and a half hours of exercise a week. One way to do this is to do half an hour of moderate-intensity exercise in bouts of 10 minutes for five days of the week. Moderate physical activity includes: brisk walking, jogging, dancing, swimming, badminton, tennis, etc.

In addition, try to do more in your daily activities in your life which can help to burn calories. For example, use stairs instead of lifts, park further away from for the entrance to the supermarket, walk or cycle to work or school, etc. **See the separate leaflet called Exercise and Physical Activity**. This includes lots of tips on how to easily increase your levels of physical activity.



Monitor your behaviour and progress

It can be helpful to keep a food diary and it is also important to weigh yourself once a week. Don't be disappointed if you put on a little or your weight loss levels off for a few days. Look at the overall pattern over several months.

Get help and support

Some people may feel motivated enough and are able to lose weight without any help. However, others need the support of a professional or a weight loss group.

You can find a lot more information and helpful tips in the separate leaflet called *Weight loss (Weight reduction)*.

Treatment with medication to help with weight loss

Medication to help with weight loss may be an option for some people who want to lose weight. However, there are no wonder medicines available. Lifestyle changes to improve diet and increase physical activity are still important.

There are four medicines available in the UK to help with weight loss: orlistat, liraglutide (Saxenda®), semaglutide (Wegovy®), and tirzepatide (Mounjaro®).

Orlistat

Orlistat is available in the UK on prescription from your doctor and low-dose orlistat is also available to buy over the counter in pharmacies. It stops some of the fat you eat being absorbed into your body. Because the fat passes on through the gut with your stools (faeces), this can cause some unpleasant side-effects.

You can have the same weight loss effect by not eating the fat in the first place, so it is not a miracle cure. Doctors and pharmacists are given specific guidelines on when orlistat should be used. **The separate leaflet called *Orlistat (Weight Loss Medicine)* gives further details.**

Liraglutide, semaglutide, and tirzepatide

Liraglutide, semaglutide, and tirzepatide are all newer medicines that can be used to help with weight loss. They are called glucagon-like peptide-1 (GLP-1) receptor agonists.



These come as injections. There has been a lot of interest in them in the last few years as they have been in the media a lot. Evidence shows that they do help with weight loss whilst using them, although weight gain may happen when they are stopped. For this reason, it's best to use them alongside other things, such as sustainable diet and exercise changes.

Semaglutide and liraglutide can only be prescribed on the NHS through specialist weight management clinics. Tirzepatide might be prescribable by GPs in the future, although at present this has not been rolled-out, and most GPs do not have access to it. It is likely that, when it becomes available, it will initially only be available for people with more severe obesity (eg BMI of 35 kg/m² or more) that is also causing major health problems. Eligibility criteria may later become wider on the NHS, but it's not possible to say if or when that will happen yet.

Semaglutide, liraglutide, and tirzepatide are all available privately (from pharmacies and private doctors) as well. If you do buy them, be sure that they are prescribed by a healthcare professional – fake versions of these medications have been sold illegally, which may cause serious harm.

Bariatric surgery

This may be an option if you have obesity and your health is at risk. It may be particularly considered if you have **type 2 diabetes**. This is because it will have even more health benefits, as the surgery may cure your diabetes as well. However, surgery is usually only offered if you have already tried other ways to lose weight which have not worked (including diet, increasing your physical activity levels and orlistat).

Surgery usually has very good results and most people do lose a lot of weight. However, this is specialist surgery and it is a major undertaking. Surgeons work in specialist weight management teams. The team helps with all the aspects of weight loss, and all the possible ways of helping you. Surgery to help weight loss is called bariatric surgery. **For more information, including the risks to consider, see the separate leaflet called Weight Loss Surgery.**

Keeping the weight off

Many people lose weight but at the end of their diet, the weight goes back on. The only way to keep the weight off is to change the lifestyle that led to your weight gain in the first place. **See the separate leaflet called Weight Loss (Weight Reduction).**



If you've lost a lot of weight but are left with a lot of excess skin and fat on the lower part of your stomach (abdomen) you may want to consider a cosmetic procedure called a 'tummy tuck' (abdominoplasty). This is usually not available on the NHS, and so most people who want one will need to pay for it privately.

Can obesity be prevented?

Yes. You can help to prevent developing obesity or overweight by:

- Following the healthy eating guidelines outlined above.
- Doing 150 minutes of physical activity a week according to the guidelines above.
- Spending less time being sedentary (for example, less time in front of your computer or watching TV).
- Weighing yourself from time to time so that you become more aware of your weight and you can do something about your weight if you start to put some on.
- Encouraging a healthy lifestyle for your whole family.

Frequently asked questions

What is considered a healthy weight for my height?

A healthy weight for most adults is defined by a Body Mass Index (BMI) between 18.5 and 24.9 kg/m². You can calculate your BMI by dividing your weight in kilograms by the square of your height in metres.

Are there different levels of obesity?

Yes, obesity is categorised into grades based on BMI. A BMI of 30–34.9 kg/m² is classified as Obese (Grade I), 35–39.9 kg/m² as Obese (Grade II), and a BMI of ≥40 kg/m² as Obese (Grade III) or morbidly obese. The health risks generally increase with higher BMI categories.



Why is fat around the belly more concerning than fat elsewhere on the body?

Fat stored around the tummy area, also known as abdominal fat, is closely linked with an increased risk of health problems, particularly cardiovascular disease and type 2 diabetes. This is why measuring your waist-to-height ratio is also important, especially if your BMI is lower than 35 kg/m² or if you have a high muscle mass.

How accurate is BMI for everyone?

While BMI is generally a good estimate of body fat, it may be less accurate for very muscular individuals because muscle weighs more than fat. Also, standard BMI measurements are not suitable for people who have had amputations. For some ethnic backgrounds, such as South Asian, Chinese, and Black African, health risks can start at lower BMI measurements.

If I have obesity, how can I find out if it's already impacting my health?

If you are concerned, you should speak with your practice nurse or doctor. They can check for symptoms like chest pains, joint pain, or disturbed sleep, and may recommend tests such as blood tests for type 2 diabetes, cholesterol levels, and a blood pressure check. They may also look for signs of psychological problems that can be linked to obesity.

How many people in the UK are affected by overweight or obesity?

According to 2021 reports, in England, 59% of women and 69% of men had overweight or obesity. This indicates that most people in England are affected, with similar figures across the rest of the UK. The UK currently has the highest rate of obesity in Western Europe.

These questions and answers have been generated from the information in this article.



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Article also available in **English**, **German**, **Spanish**, **French**, **Italian** (<https://it.patient.info/healthy-living/obesity-overweight>), **Portuguese** (<https://pt.patient.info/healthy-living/obesity-overweight>), **Hindi** (<https://hi.patient.info/healthy-living/obesity-overweight>), **Hebrew** (<https://he.patient.info/healthy-living/obesity-overweight>), **Arabic** (<https://ar.patient.info/healthy-living/obesity-overweight>), and **Swedish** (<https://sv.patient.info/healthy-living/obesity-overweight>).

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