

# Obesity

## Introduction

Obesity is a term used to describe somebody who is very overweight with a high degree of body fat.

There are a number of ways a person's weight can be assessed. The most widely used method is body mass index.

Body mass index (BMI) is your weight in kilograms divided by your height in metres squared. You can use the NHS Choices BMI healthy weight calculator to work out your own BMI:

if your BMI is between 25 and 29, you would be considered overweight

if your BMI is between 30 and 40, you would be considered obese

if your BMI is over 40, you would be considered very obese (known as "morbidly obese")

Another useful method is to measure around your waist. People with very fat waists (94cm or more in men and 80cm or more in women) are more likely to develop obesity-related health problems.

## The risks of obesity

Being obese increases your risk of developing a number of serious and potentially life-threatening diseases, such as:

type 2 diabetes

heart disease

some types of cancer, such as breast cancer and colon cancer

stroke

In addition, obesity can damage your quality of life and can often trigger depression.

## Obesity in children

Obesity is also an increasing problem in children, with around one in seven children classified as obese.

Read advice for parents of obese children.

## Obesity and pregnancy

If you're pregnant, being very overweight can cause complications for you and your baby.

Find out more about obesity and pregnancy.

## Treatment of obesity

There are four main goals in the treatment of obesity:

preventing further weight gain

gradually losing weight through a combination of a calorie-controlled diet and regular exercise

avoiding regaining any lost weight

improving general health and reducing the risk of obesity-related complications

Some people prefer a one-to-one consultation with a trainer or dietitian, while others prefer being part of a weight loss group, which can either be organised by local clinical commissioning groups (CCGs) or through commercial organisations. You may want to use an internet application such as the NHS BMI Tracker tool to monitor your weight.

A medication called orlistat can aid weight loss, but this should be used in combination with the steps mentioned above, not as an alternative. Your DOCTOR will be able to advise whether orlistat is suitable for you.

Many people will also need help examining and changing unhealthy patterns of thinking and behaviour.

Read more about the treatment of obesity.

## Weight loss surgery

Weight loss surgery is used as a last resort to treat people who are dangerously obese. A gastric band or gastric bypass operation is only available on the NHS to treat people with potentially life-threatening obesity that does not respond to non-surgical treatments, such as lifestyle changes.

Read more about weight loss surgery for obesity.

## Causes of obesity

Most cases of obesity are caused by a person eating more calories than they burn off, and the unused calories being turned into fat. Modern lifestyles also do not help:

there is easy access to cheap, high energy food that is often marketed aggressively

people's lifestyles and jobs are much less active than in the past – many leisure activities, such as watching television, playing video games and browsing the internet, are usually done sitting down

people drive or use public transport and tend to walk a lot less than they used to

There are also a number of conditions that can cause weight gain, such as polycystic ovary syndrome.

Read more about the causes of obesity.

## How many people are obese?

## Outlook for obesity

There is no "magic wand" treatment for obesity. Weight loss programmes take commitment and can be challenging, but they are successful for people who stick with them.

Research looking at obese people who completed a commercial weight loss programme lasting 12 months found they lost around 5-10% of their body weight.

While this may not sound like a great amount, it is important to stress that even a modest reduction in weight brings important health benefits. Losing this amount of weight will significantly reduce your risk of developing conditions such as type 2 diabetes and heart disease.

### Symptoms of obesity

Being a little overweight may not cause many noticeable problems. However, once you are carrying a few extra kilograms (or pounds), you may develop symptoms that affect your daily life.

### Short-term problems

Obesity causes day-to-day problems such as:

breathlessness

increased sweating

snoring

difficulty sleeping

inability to cope with sudden physical activity

feeling very tired every day

back and joint pains

### Long-term problems

Obesity can also cause changes you may not notice that can seriously harm your health, such as:

high blood pressure (hypertension)

high cholesterol levels (fatty deposits blocking your arteries)

Both conditions significantly increase your risk of developing a cardiovascular disease, such as:

coronary heart disease, which may lead to a heart attack

stroke, which can cause significant disability and can be fatal

Read more about the complications of obesity.

Another long-term problem that can affect obese people is type 2 diabetes. It is estimated that just under half of all cases of diabetes are linked to obesity. The main symptoms of diabetes are:

feeling very thirsty

going to the toilet a lot, especially at night

extreme tiredness

### Psychological problems

In addition to the day-to-day problems of obesity, many people may also experience psychological problems, such as:

low self-esteem

low confidence levels

feeling isolated in society

These can affect relationships with family members and friends and may lead to depression.

### Causes of obesity

Most cases of obesity are caused by eating too much and moving too little. If you consume high amounts of energy from your diet but do not burn off the energy through exercise and physical activity, the surplus energy is turned into fat.

### Calories

The energy value of food is measured in units called calories.

The average physically active man needs 2,500 calories to maintain a healthy weight, and the average physically active woman needs 2,000. This may sound high, but it can be easy to reach this limit if you eat certain types of food.

For example, eating a large take away hamburger, fries and a milkshake can add up to 1,500 calories of your intake.

Another problem is that many people are not physically active, so lots of the calories they consume end up being "wasted" and converted into fat cells.

## Lifestyle choices

Obesity does not just happen overnight – it develops gradually from poor diet and lifestyle choices.

For example, unhealthy food choices could include:

eating processed or fast food high in fat

not eating fruit, vegetables and unrefined carbohydrates, such as wholemeal bread and brown rice

drinking too much alcohol – alcohol contains a lot of calories, and heavy drinkers are often overweight

eating out a lot – you may have a starter or dessert in a restaurant, and the food can be higher in fat and sugar

eating larger portions than you need – you may be encouraged to eat too much if your friends or relatives are also eating large portions

comfort eating – if you feel depressed or have low self-esteem, you may comfort eat to make yourself feel better

Unhealthy eating habits tend to run in families, as you learn bad eating habits from your parents.

Childhood obesity can be a strong indicator of weight-related health problems in later life, showing that learned unhealthy lifestyle choices continue into adulthood.

## Lack of physical activity

Lack of physical activity is another important factor related to obesity. Many people have jobs that involve sitting at a desk most of the day. They also rely on their cars rather than walking or cycling.

When people relax, they tend to watch TV, browse the internet or play computer games, and rarely take regular exercise.

If you are not active enough, you do not use the energy provided by the food you eat and the extra calories are stored as fat instead.

The Department of Health recommends adults do at least 150 minutes (2 hours and 30 minutes) of moderate-intensity aerobic activity such as cycling or fast walking every week.

However, if you are obese and trying to lose weight, you may need to do more exercise – in some cases, up to 300 minutes (five hours) may be recommended.

Read more about the physical activity guidelines for adults.

## Genetics

Some people claim there is no point in losing weight because "it runs in my family" or "it's in my genes".

While there are some rare genetic conditions that can cause obesity, such as Prader-Willi syndrome, there is no reason why most people cannot lose weight.

It may be true that certain genetic traits inherited from your parents – such as taking longer to burn up calories (having a slow metabolism) or having a large appetite – can make losing weight more difficult, but it certainly does not make it impossible.

Many cases where obesity runs in families may be due to environmental factors, such as poor eating habits learned during childhood.

## Medical reasons

Medical conditions that can cause weight gain include:

Cushing's syndrome, a rare disorder that causes the over-production of steroid hormones

an underactive thyroid gland (hypothyroidism), where your thyroid gland does not produce enough thyroid hormone

Certain medicines, including some corticosteroids and antidepressants, can also contribute to weight gain. Weight gain can also be a side effect of taking the combined contraceptive pill and from quitting smoking.

## Diagnosing obesity

Body mass index (BMI) is currently used as the most accurate and reliable way of measuring how overweight you are. You can use the healthy weight calculator to calculate your BMI. You will need to know your height and weight.

For most adults, a healthy weight is having a BMI between 18.5 and 24.9. A BMI between 25 and 29.9 is considered overweight. A BMI over 30 is considered obese.

The BMI calculation cannot take very muscular figures into account. Muscle can add extra weight, and this may give you an overweight or obese BMI when you are not an unhealthy weight.

For example, a heavyweight boxer would be classed as obese using the BMI, when he is in fact a healthy weight.

However, for most people BMI remains an accurate method of assessing weight.

Children and young people should not use BMI to calculate if they are a healthy weight, as their bodies are still developing. Instead, children and young people should visit their DOCTOR, who will be able to tell them if they are overweight or obese for their height and sex.

Most modern leisure centres have weighing scales that can electronically measure the percentage of your body weight that is fat. This can be compared with the ideal for your height, age and sex, and may give you an indication of how overweight you are.

## Visiting your DOCTOR

If you are overweight or obese, visit your DOCTOR to find out if you are at increased risk of health problems, and how you can safely lose weight. Your DOCTOR will ask about:



any underlying causes for your obesity – for example, if you are on certain medication or have a medical condition that causes weight gain

your lifestyle – particularly your diet and how much physical activity you do, and also whether you smoke and how much alcohol you drink

how you feel about being overweight – for example, if you are feeling depressed

how motivated you are to lose weight

your family history of obesity and other health conditions, such as diabetes (a condition caused by too much glucose in the blood)

### Further tests

As well as calculating your BMI, your DOCTOR may also perform tests to determine if you are at increased risk of health complications because of your obesity. These could include:

measuring your blood pressure

measuring your waist circumference (the distance around your waist)

measuring the glucose (sugar) and lipid (fat) levels in a sample of your blood

Your DOCTOR may also consider your age and ethnicity, as these can affect your risk of certain conditions.

For example, some people of Asian, African or Afro-Caribbean ethnicity may be at increased risk of high blood pressure (hypertension), and some older people may be at lower risk.

### Treating obesity

If you are obese and you want to lose weight, you should see your DOCTOR.

They will recommend:

what type of diet you should be following

how much exercise you will need to do

whether you need further testing or treatments for obesity-related conditions

whether you need treatment for an underlying cause of obesity, such as polycystic ovary syndrome

Your DOCTOR may refer you to other services, such as local weight loss groups. These could be provided by the NHS or may be commercial services you pay for.

If it's appropriate, your DOCTOR may recommend exercise on prescription, where you are referred to a local active health team for a number of sessions under the supervision of a qualified trainer. Depending on where you live, the exercise programme may be free or at a reduced cost.

Read more about how your DOCTOR can help you lose weight.

## Diet

While there is no single rule, most obese people are told they have to reduce the energy intake from their diet by 600 calories a day.

The best way to achieve this is to swap unhealthy and high energy food choices such as fast food, processed food and sugary drinks (including alcohol) for healthier choices.

A healthy diet should consist of :

plenty of fruit and vegetables

plenty of potatoes, bread, rice, pasta and other starchy foods (ideally you should choose wholegrain varieties)

some milk and dairy foods

some meat, fish, eggs, beans and other non-dairy sources of protein

just small amounts of food and drinks that are high in fat and sugar

Also avoid food that contains high levels of salt as this can raise your blood pressure, which can be dangerous in already obese people.

Read more about the dangers of salt.

You will also need to check calorie information for each type of food and drink you consume to make sure you do not go over your daily limit.

Read more about calorie counting.

Some restaurants, cafés and fast food outlets provide calorie information per portion, but providing this information is not compulsory. Be careful – some foods can quickly take you over the limit, such as burgers, fried chicken and some curries or Chinese dishes.

### Avoid fad diets

You should avoid fad diets that recommend unsafe practices such as fasting (going without food for long periods of time) or cutting out entire food groups such as meat, fish, wheat or dairy products.

These are not sustainable, can make you feel ill, and may cause unpleasant side effects such as bad breath, diarrhoea and headaches.

Read more about the truth behind fad diets.

This is not to say that all commercial diet programmes are unsafe. Many are based on sound medical and scientific principles and can work well in some people. A responsible diet programme should:

educate you about issues such as portion size, making changes to behaviour and healthy eating

not be overly restrictive in terms of the type of food you can eat

be based on achieving gradual sustainable weight loss rather than short-term rapid weight loss, which is unlikely to last

### Very low calorie diet

A very low calorie diet (VLCD) is where you consume less than 1,000 calories a day. An example of a VLCD would be:

a bowl of cornflakes for breakfast

a single jaffa cake as a mid-morning snack

a chicken salad sandwich for lunch

a low calorie lasagne for an evening meal

a pear for an after-dinner treat

This plan also assumes that you will be drinking water or diet drinks throughout the day, as most other popular drinks such as tea and coffee contain calories.

Remember, excessive amounts of fizzy diet drinks can damage your teeth – they may not contain sugar, but they do contain high levels of certain acids.

While a VLCD can be an effective method of losing weight for some obese people, it is not a suitable or safe method for everyone. It would usually only be recommended if rapid weight loss was required to reduce the risk of an obesity-related complication, such as heart disease, or if you have failed to lose weight despite conventional treatment.

You should only ever undertake a VLCD under the supervision of a suitably qualified healthcare professional.

Further information

For more information on diet and weight loss, see:

start losing weight

healthy food swaps

eight tips for healthy eating

food labels

Exercise

Reducing the amount of calories in your diet will stop you putting on more weight. But if you want to lose weight, you have to combine a calorie-controlled diet with regular exercise.

Your DOCTOR or weight loss adviser will be able to provide an exercise plan suited to your circumstances, which will probably recommend so many hours of moderate-intensity physical activity a week.

Moderate-intensity physical activity is any activity that increases your heart and breathing rate and may make you sweat, but you are still able to hold a normal conversation.

Examples include:

fast walking

jogging

swimming

tennis

using a step-trainer or similar at the gym

Choose physical activities that you enjoy, as you are more likely to continue doing them.

You should aim to start gradually – possibly 15 to 20 minutes of exercise five times a day – and then build on it.

Further information

For more information on exercise, see:

health and fitness

get active your way

get running with Couch to 5K

gym-free exercise

the 10,000 step challenge

Medication

More than 120 different types of anti-obesity medication have been tested in clinical trials, but only one has proved to be both safe and effective. This medication is called orlistat.

Orlistat

Orlistat works by blocking the action of a protein used to digest fat. The undigested fat is not absorbed into your body and is passed out with your faeces (stools).

Orlistat will stop around one-third of the fat from the food you eat from being digested.

This will help you avoid gaining weight, but it will not necessarily cause you to lose weight. It is therefore still important to stick to your recommended diet and exercise plan.

One orlistat capsule is taken with each main meal (a maximum of three capsules a day). You can take the capsule either before, during, or up to one hour after each meal.

If you miss a meal or the meal does not contain any fat, you may not need to take the orlistat capsule. Your DOCTOR should explain this to you, or you can check the patient information leaflet that comes with your medication.

You must have made a significant effort to lose weight through diet, exercise or changing your lifestyle before taking orlistat. Even then, orlistat is only prescribed if you are on a low calorie diet and you have:

a body mass index (BMI) of 28 or more and other conditions related to weight, such as high blood pressure (hypertension)

a BMI of 30 or more

Treatment with orlistat must be combined with a low-fat diet and other weight loss strategies, such as doing more exercise. If you are prescribed orlistat, you will also be offered advice and support about diet, exercise and making lifestyle changes.

Treatment with orlistat should only continue beyond three months if you have lost 5% of your body weight. Orlistat usually starts to affect how you digest fat within one to two days. If orlistat has not worked after three months, it is unlikely to be an effective treatment for you.

If you have type 2 diabetes (a condition caused by too much glucose in the blood), it may take you longer to lose weight using orlistat. Your target weight loss after three months may therefore be slightly lower.

If orlistat is successful after three months, your prescription may be continued for up to a year. After that, your DOCTOR will review your condition and decide whether you should continue with orlistat or not.

Side effects of orlistat include:

fatty or oily stools

needing the toilet urgently

passing stools more frequently

oily discharge from your rectum (you may have oily spots on your underwear)

flatulence (wind)

stomach pain

headaches

upper respiratory tract infections, such as a cold or sore throat

Side effects are much less likely if you stick to a low fat diet.

Women taking the oral contraceptive pill are advised to use an additional method of contraception, such as a condom, if they experience severe diarrhoea while taking orlistat.

This is because the contraceptive pill may not be absorbed by your body if you have diarrhoea, and so may not be effective.

Orlistat is not suitable for pregnant or breastfeeding women.

Treating obesity in children

Treating obesity in children is based on much the same principles as treating obesity in adults – by combining a calorie-controlled diet with regular exercise.

The amount of calories your child should eat every day will depend on their age and height. Your DOCTOR should advise on a recommended daily limit.

It is recommended all children get at least one hour of moderately intense exercise a week, such as running, playing football or netball.

You should restrict sedentary activities such as watching television or playing computer games to less than two hours a day (14 hours a week).

It may be better to gradually introduce these changes to your child's behaviour and then try to get them to change.

Referral to a specialist in treating childhood obesity may be recommended if:

your child develops an obesity-related complication such as high blood pressure, sleep apnoea (interrupted breathing during sleep) and depression

it is thought there is an underlying medical condition causing the obesity, such as a hormonal condition

The use of orlistat in children is only recommended in exceptional circumstances, such as if a child is severely obese and also has an obesity-related complication.

## Alcohol

As well as sticking to your recommended diet, it is important you moderate – or ideally avoid – consuming alcohol. Alcohol is an often overlooked source of calories that can quickly cause you to gain weight.

For example:

a glass of red wine contains 120 calories

a pint of premium lager (5% ABV) contains 250 calories

a single serving of a spirit such as vodka or gin contains 55 calories

Read more about calories in alcohol.

## Other useful strategies

Evidence has shown that weight loss can be more successful if it involves other strategies. This could include things like:

setting realistic weight loss goals

eating more slowly

avoiding situations where you know you may be tempted to overeat

involving your friends and family with your attempts to lose weight, as they can help motivate you

monitoring your progress, for example with a diary

You may also find psychological support from a trained healthcare professional helps you change the way you think about food and eating through techniques such as cognitive behavioural therapy (CBT).

## Surgery for obesity

Weight loss surgery, also called bariatric surgery, is used as a last resort to treat people who are dangerously obese (carrying an abnormally excessive amount of body fat).

Potentially life-threatening obesity is defined as:



having a body mass index (BMI) of 40 or above

having a BMI of 35 or above and having another serious health condition that could be improved if you lose weight, such as type 2 diabetes or high blood pressure

## Complications of obesity

Being obese can lead to serious health problems, as well as shorten your life expectancy.

### Health problems

Being overweight or obese can increase your risk of health problems, including:  
high blood pressure (hypertension) – this is a major risk factor for developing a serious cardiovascular disease (conditions that can affect the circulation of blood around the body)

infertility

type 2 diabetes

many types of cancer

heart disease

stroke

asthma

osteoarthritis – a condition that affects the joints

back pain

depression

liver disease

kidney disease

sleep apnoea – a condition that causes interrupted breathing during sleep

gastro-oesophageal reflux disease

If you are obese, you are also more likely to develop complications in pregnancy, such as gestational diabetes or pre-eclampsia (which is when a

woman experiences a potentially dangerous rise in blood pressure during pregnancy).

### Preventing obesity

The best way to prevent becoming overweight, or obese, is by eating healthily and exercising regularly.

As obese children also tend to be obese in later life, it is important for parents to set the right example for their children from an early age.