About the British Heart Foundation

The British Heart Foundation (BHF) is the nation’s heart charity, dedicated to saving lives through pioneering research, patient care, campaigning for change, and providing vital information.

We rely on donations of time and money to continue our life-saving work. If you would like to make a donation, please:

- call our donation hotline on 0300 330 3322
- visit bhf.org.uk/give or
- post it to us at the address on the back cover.

For other ways to support our work, and for up-to-date information on heart disease, the BHF and our services, see bhf.org.uk

Together we can beat heart disease.
About this booklet

If you have diabetes, you have a much greater risk of developing coronary heart disease than people who don’t have diabetes. So it’s vital that you protect your heart as much as possible. If you have both diabetes and coronary heart disease, it’s very important to keep your diabetes under control, as this will help to keep your heart healthy.

This booklet is for people who have diabetes, and for their families and friends. It may also be useful if you don’t have diabetes but you have been told you may develop it in the future.

The booklet tells you:

• what coronary heart disease is
• what diabetes is, and how it is diagnosed and treated
• why people with diabetes are more likely to get coronary heart disease
• what you can do to reduce your risk of developing coronary heart disease
• what medicines and treatments you might be given to help prevent or treat coronary heart disease, and
• what routine checks you should have.
This booklet does not replace the advice that the health professionals looking after you may give you, but it should help you to understand what they tell you.

If you are of South Asian origin

People of South Asian origin living in the UK are more likely to have diabetes than the general population. If you are of South Asian origin, you may find it helpful to read our booklet *Diabetes and how it affects your heart*, which is available in English, Bengali, Gujarati, Hindi, Punjabi and Urdu.
What is coronary heart disease?

How the heart works

Your heart is a muscle that pumps blood around your body, delivering oxygen to all your organs through a system of arteries.

Your heart muscle gets its own supply of blood from the coronary arteries. These are blood vessels on the surface of your heart.

The heart

(right coronary artery)

(left coronary artery)
Coronary heart disease

Over time, the walls of the arteries can slowly become furred up with a fatty material called atheroma. **Coronary heart disease** is when the coronary arteries become so narrow that the blood supply to the heart muscle is restricted. This can cause **angina** (pain or discomfort in the chest). Or, if a coronary artery becomes completely blocked, it can cause a **heart attack**.

![How atheroma builds up diagram]

- **artery wall**
- **blood within the artery**
- **atheroma (fatty deposits) building up**
- **Atheroma narrows the artery, restricting the flow of blood to the heart.**
Who is at risk of coronary heart disease?

Coronary heart disease is the UK’s single biggest killer. One in six men and one in nine women die from this disease.

People who have diabetes have a much higher risk of developing coronary heart disease than people who don’t have diabetes. And they are three times more likely to have a heart attack. Among those who have diabetes, women have a greater risk of developing coronary heart disease than men.

People of African-Caribbean or South Asian origin living in the UK have a greater risk of developing diabetes than other people in the UK. And having diabetes increases their risk of developing coronary heart disease.

If you have diabetes, there is a lot you can do to reduce the risk of developing coronary heart disease, or to reduce its effects.
What increases the risk of coronary heart disease?

Having certain ‘risk factors’ increases the risk of coronary heart disease. (A ‘risk factor’ is something that increases your likelihood of getting a disease.) The main risk factors for coronary heart disease are:

- Physical inactivity (lack of exercise).
- Smoking.
- High blood cholesterol.
- High blood pressure.
- Being overweight or obese.
- Having diabetes.
- Having a family history of coronary heart disease. This means if your father, mother, brother or sister has (or had) coronary heart disease at a young age – under 65 for women or under 55 for men.
- Ethnic background. People from South Asian backgrounds are at a higher risk than other people in the UK.

On page 22, we explain more about what you can do to reduce many of these risk factors.
Diagnosing angina and heart attacks in people who have diabetes

If you have diabetes, your diabetes may have caused nerve damage to your heart and blood vessels (see page 16). As a result of this, you may not always feel the pain or discomfort caused by angina or a heart attack in the same way as someone who does not have diabetes. Also, sometimes it is more difficult for doctors to diagnose angina or a heart attack in people who have diabetes.

If you get chest pain or think you are having a heart attack, call 999 immediately for an ambulance.

For more information on angina and heart attacks, and their symptoms, see our booklets *Angina* and *Heart attack*. 
What is diabetes?

Diabetes is a condition in which the level of glucose (sugar) in the blood is too high.

Your body produces glucose when you digest food. The blood carries glucose to all the cells of the body, where it is used as fuel. As a result, the amount of glucose left in the blood goes down. A hormone called insulin controls the level of glucose in your blood by helping the glucose to leave the blood and enter the cells. Insulin is made in the pancreas – an organ that lies behind the stomach.

Diabetes develops when your body doesn’t produce enough insulin, or if your body is unable to properly use the insulin that is being produced. The body’s cells become starved of glucose because they are not getting it from the blood. At the same time, because the glucose cannot move into the cells, the glucose level in your blood increases.

Around 3 million people in the UK have diabetes. And there are around a million more who have diabetes but don’t know it, because it hasn’t been diagnosed. Worryingly, the number of people in the UK with diabetes is continuing to increase.
Some ethnic groups in the UK have a higher rate of diabetes than the rest of the population, particularly South Asian and black African-Caribbean people.

Also, diabetes is more common in people living in the more deprived parts of the UK than in those living in more wealthy areas.

Types of diabetes

There are two types of diabetes.

- People with **type 1 diabetes** do not produce any insulin.
- People with **type 2 diabetes** do not produce enough insulin, or the body is unable to properly use the insulin that is being produced.

Type 1 diabetes

Type 1 diabetes is less common than type 2 diabetes and it usually develops in children and young adults.

The cause of type 1 diabetes is still not fully understood. It may happen because the body’s own immune system (the cells that fight infection) attack and destroy the insulin-producing cells, preventing them from making insulin. This leads to increased glucose levels in the blood.
Type 2 diabetes

Most people with diabetes – about nine out of every ten – have type 2 diabetes. This type of diabetes tends to develop gradually after the age of 40, although in black African-Caribbean people and people of South Asian origin it tends to develop earlier – in some cases in people as young as in their 20’s.

If the body has too much fat, this can affect the production of glucose or how it is used. The body can become less sensitive to insulin, so it continues to make glucose when it’s not needed and the glucose level in your blood starts to rise.

Being overweight, carrying too much weight around your middle and being inactive are all closely linked to type 2 diabetes. In the UK, many people are overweight or don’t do enough activity. This is probably one of the reasons why an increasing number of people – including more younger people – are now developing type 2 diabetes.

Having a parent or brother or sister who has, or had, diabetes can greatly increase your risk of developing it.
How can people find out if they are at risk of diabetes?

People who have any of the symptoms described on page 15 should see their doctor.

Being overweight, being physically inactive, having a family history of diabetes, being of South Asian origin, or having a history of diabetes during pregnancy can all increase the risk of diabetes. To find out if you are at risk of developing diabetes, do the Type 2 diabetes risk test, which is available at www.diabetes.org.

You can greatly reduce your risk of developing diabetes by eating healthily, controlling your weight and doing regular physical activity.
What are the symptoms and possible complications of diabetes?

**Symptoms**
Different people develop different symptoms. The symptoms for diabetes are:

- increased thirst
- passing more urine than usual, particularly at night
- extreme tiredness
- unexplained weight loss
- blurred vision
- genital itching or regular episodes of thrush
- slow healing of wounds.

Symptoms are usually relieved quickly once the diabetes is treated and under control.

**Don’t ignore symptoms**
With type 2 diabetes, the symptoms may not be very obvious, because the condition often develops slowly over time, and it’s easy to put the symptoms down to the effects of ageing. This is partly why diabetes often goes undiagnosed. Anyone who is experiencing any of the symptoms listed above should see their doctor, as they may have diabetes.
It’s vital to get diabetes picked up as soon as possible, so that you can get treatment to reduce the risk of any complications.

Possible complications

Over time, diabetes can cause damage to different parts of the body.

- **The heart and blood vessels** – Diabetes increases the risk of high blood pressure, coronary heart disease, strokes and peripheral arterial disease (disease of the arteries that carry blood to the different parts of the body such as the legs).

- **The eyes** – Diabetes can affect the blood vessels in the eye, leading to problems with your eyesight.

- **The kidneys** – Diabetes can cause damage to the small blood vessels in the kidneys, causing the kidneys to work less well.

- **The feet** – There may be problems with the circulation that can lead to ulcers.

- **The nerves** – Damage to the nerves can lead to loss of sensation, pain, numbness or tingling in the hands, legs and feet. Nerve damage can also affect the penis, causing impotence (when a man has difficulty achieving and maintaining an erection).
The good news is that you can help to prevent or delay these problems by making changes to your lifestyle and managing your diabetes well. Good management includes:

- keeping to your agreed targets for your blood glucose, blood cholesterol and blood pressure levels
- eating healthily
- keeping to a healthy weight
- being active, and
- going for a review each year.

We explain more about all these things later in this booklet.
How is diabetes diagnosed?

Various tests are used for diagnosing diabetes. Some of these tests are also used to check blood glucose levels in people who already have diabetes.

Blood glucose tests

If you have any symptoms associated with diabetes, you may have a blood test to check your blood glucose level. Sometimes this is done straight away, as a random glucose test. You don’t need to fast before this test. (Fasting means not eating anything for a certain amount of time before the test.)

Or sometimes the test is done as a fasting test, which means that you can’t eat anything for eight hours before the test (although you can drink water during this time).

Oral glucose tolerance test

With this test you need to fast for eight hours and then have your blood glucose level checked. You will then be given a sugary drink. Two hours after having the drink, your blood glucose level is checked again to see how your body is dealing with the glucose in the drink.
HbA1c test
This blood test can help to diagnose type 2 diabetes and is a way of checking your long-term diabetes control. It measures your average blood glucose levels for the previous two to three months. If you have high levels of HbA1c (glycated haemoglobin) in your red blood cells, it means that your blood glucose levels have been high over the last few months. You don’t have to fast for this test.
What treatment do people receive for diabetes?

Unfortunately diabetes cannot be cured, but it can be managed very successfully with lifestyle changes and medicines. Good control of your diabetes is vital in order to reduce the risk of complications.

If you have type 1 diabetes, you will need to have insulin injections. Your GP may also refer you to a specialist doctor.

If you have type 2 diabetes, the first line of treatment is to try and lose some weight (if you are overweight), become more physically active, and eat a healthy diet. If this doesn’t help to control your glucose levels, you may need to take tablets. They will help you feel better by relieving your symptoms, and will reduce your risk of complications. There are different kinds of medicines that work in different ways. Many people with type 2 diabetes eventually need to have insulin injections to control their diabetes.
How does diabetes affect the heart?

Diabetes can damage the heart in several ways.

- High glucose levels in the blood affect the walls of the arteries, making them more likely to develop atheroma, which can lead to a heart attack or a stroke (see page 7).
- Diabetes can increase the risk of having high blood pressure.
- People with type 2 diabetes often have higher levels of triglyceride (a fatty substance in the blood) and lower levels of HDL cholesterol (the ‘protective’ type of cholesterol). This can increase the risk of atheroma developing.
- Diabetes can actually increase the damage done by some of the risk factors for coronary heart disease – including smoking, high blood pressure and high blood cholesterol.
- Diabetes can affect the heart muscle, making it less able to pump efficiently.
What can I do to reduce my risk of coronary heart disease?

If you have diabetes, you have a higher risk of developing coronary heart disease. Your doctor or nurse will assess your risk by asking you questions about your lifestyle, and checking your blood pressure and cholesterol levels, and your weight and waist size. They will tell you how you can reduce your risk by making lifestyle changes, controlling your blood glucose level, and taking certain medicines.

The following will help protect you from coronary heart disease.

- Keep physically active.
- If you smoke, stop smoking.
- Eat a healthy, balanced diet. This will also help reduce your blood cholesterol levels.
- Try to control or prevent high blood pressure.
- Be a healthy weight and body shape.
- Keep your blood glucose level to your agreed target.

We explain more about each of these on the following pages.
Keep physically active

Regular physical activity helps to reduce your risk of developing coronary heart disease. If you have diabetes, physical activity will also help you control your blood glucose, so that you may be able to reduce the number of tablets or the amount of insulin that you need to take.

The aim is to gradually build up to doing at least 150 minutes (2½ hours) of moderate-intensity physical activity a week, in bouts of 10 minutes or more. One way to approach this is to do 30 minutes’ activity a day, on at least five days a week. Moderate-intensity activity means activity that makes you feel slightly out of breath and

Medicines to help reduce your risk of coronary heart disease

If you have diabetes, your doctor will probably prescribe a statin for you, to help protect your heart and reduce your risk of having a heart attack. This is a medicine for reducing cholesterol levels, but you may need to take it even if you don’t have a high cholesterol level. (See page 29.)

If you have high blood pressure your doctor may prescribe you medicines to lower it. This will also help to reduce your risk of coronary heart disease.
warmer than usual.

If you’re not used to doing this amount of activity, it is important to start at a level that suits you and increase gradually both the intensity of the activity and the amount of time you do the activity for. Some people may not be able to do much activity, but doing even a little is better than doing none and can benefit your health.

The type of activity that helps both your heart and your diabetes is moderate-intensity activity such as brisk walking or cycling. Walking is one of the best forms of activity. You don’t need to wear any special clothes, it’s easy to fit into your everyday life, and it’s free.

When you do any activity, make sure that you wear properly fitting footwear that provides good cushioning. This is particularly important if you have diabetes.

If you are taking insulin or certain tablets for your diabetes, you may find that your blood glucose level falls quickly during or after exercise. Speak to your doctor or diabetes specialist nurse about how to manage this. Ask them for advice about what to do if you feel that your blood glucose has dropped or if you feel unwell while doing your activity.
Physical activity tips

- If you have heart disease or high blood pressure, check with your GP before you increase your physical activity, or before doing any new activity. Ask about how much and what type of activity you can do, and how intensely you should do it.
- When you are doing any physical activity or sport, begin slowly for the first few minutes and build up gradually. At the end, spend a few minutes slowing down gradually.
- Stop if you get any pain, or feel dizzy, sick or unwell, or very tired.
- Dress warmly when doing any physical activity outdoors in very cold or windy weather.

For more information on activity, see our booklets *Physical activity and your heart*, and *Get active, stay active*. 
If you smoke, stop smoking

Everyone risks damaging their health through smoking cigarettes, pipes, cigars or shisha, but for people with diabetes the risks are even greater, because diabetes increases the damage done by smoking.

If you have diabetes, you already have an increased chance of developing heart disease or having a stroke. Combine this with smoking, and the chances of developing these diseases become even higher.

**Stopping smoking is the most positive thing you can do to reduce your risk of coronary heart disease, protect your heart, improve your health, and help you live longer.**

Your GP, practice nurse or pharmacist can give you advice on stopping smoking and on local support services.

The following can offer information, advice and support on stopping smoking.

- **NHS Smoking Helpline 0800 022 4 332**
  www.smokefree.nhs.uk
- **Quitline 0800 00 22 00**
  Website: www.quit.org.uk
  Quitline also runs helplines in different languages.
- **www.wequit.co.uk**
  This website has information about quitting and an
online forum where you can swap tips with fellow quitters.

For more information on stopping smoking, see our booklet *Stop smoking*.

**Eating a healthy diet**

Eating a healthy, balanced diet can help to reduce your risk of coronary heart disease and help to control your diabetes.

- Eat at least five portions of a variety of **fruit and vegetables** a day.
- Choose **healthier fats**. This will help to improve your cholesterol level and protect your heart. (We explain more about this on the next page.)
- Aim to have two portions of **fish** a week. One of these portions should be oily fish – such as trout, sardines, herrings, mackerel or fresh tuna.
- Eat **high-fibre foods**, especially foods like oats and pulses – for example, kidney beans and lentils.
- Reduce the amount of sugar and salt that you eat.
- If you drink alcohol, make sure you drink within the recommended sensible limits – no more than 3 or 4 units of alcohol a day for men, and no more than 2 or 3 units a day for women. If you have alcohol, it is best to drink it with a meal.
Eating less saturated fat, to help reduce your cholesterol levels

Cholesterol and triglycerides are fatty substances that are mainly made in the body.

**Cholesterol** is made in the liver and plays a vital role in how every cell in the body works. However, too much cholesterol in the blood can be harmful. One of the causes of high cholesterol is eating too much saturated fat. (This is a type of fat we get mainly from foods like butter, ghee, cheese and fatty meats.)

There are two main types of cholesterol:

- **LDL** is the harmful cholesterol.
- **HDL** is a protective cholesterol, because it helps remove the harmful LDL cholesterol from the bloodstream.

**Triglycerides** are another type of fatty substance in the blood. They come from fats in food and are also produced in the liver.

People who are very overweight, eat a lot of fatty and sugary foods, or drink too much alcohol are more likely to have a high triglyceride level.

If you have a high triglyceride level, you run a greater risk of coronary heart disease. The risk is particularly high if you also have a low level of HDL – the protective type of cholesterol. Unfortunately, this pattern is often seen in
people with type 2 diabetes.

If you have diabetes, your goal should be to have:

- a total cholesterol level under 4 mmol/l
- an LDL cholesterol level under 2 mmol/l
- an HDL cholesterol level above 1 mmol/l
- a triglyceride level under 1.7 mmol/l.

**What you can do**

Eating healthily can help to improve your cholesterol level and protect your heart. In particular, you need to replace **saturated fats** with monounsaturated fats and polyunsaturated fats.

Keeping to a healthy weight and being active will also help to improve your cholesterol.

If you have diabetes, your doctor will probably recommend that you take a statin, to help lower your cholesterol. You may need to take this medicine even if you don’t have a high cholesterol level. This is because statins help to reduce the risk of coronary heart disease. Your doctor may also recommend that you take a fibrate medicine to help control your triglyceride levels.

For more information on cholesterol and healthy eating, see our booklets *Eating well* and *Reducing your blood cholesterol.*
Try to control or prevent high blood pressure

High blood pressure is very common in people with diabetes and it is essential to control it to protect your heart and reduce your risk of complications. If you have diabetes, your goal is to have a blood pressure below 130/80mmHg. It’s important to have your blood pressure checked at least once a year, or more often if your doctor or nurse thinks it’s necessary.

Some people can control their blood pressure by losing weight, doing more physical activity and cutting down on alcohol and salt. However, many people need to take medicines too. For more information on high blood pressure, see our booklet Blood pressure.

Be a healthy weight and body shape

If you are overweight, losing some weight can help lower your blood pressure and cholesterol levels and help to prevent or control diabetes. This will also help to reduce the risk of coronary heart disease. To find out if you need to lose weight, check the chart on the next page. If you fall into the ‘overweight’ or ‘very overweight’ category, you need to lose some weight.
Are you a healthy weight?

Take a straight line up or down from your weight, and a line across from your height (without shoes). Put a mark where the two lines meet to find out if you need to lose weight.

Adapted from the height/weight chart by kind permission of NHS Choices, Department of Health
Are you a healthy shape?

Also, measure your waist to see if you are carrying too much weight around your middle. Look at the box below to see if your health is at risk.

<table>
<thead>
<tr>
<th></th>
<th>Your health is at risk if you have a waist measurement of:</th>
<th>Your health is at high risk if you have a waist measurement of:</th>
</tr>
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<tbody>
<tr>
<td>Men</td>
<td>94 centimetres (about 37 inches)</td>
<td>102 centimetres (about 40 inches)</td>
</tr>
<tr>
<td>South Asian men</td>
<td></td>
<td>90 centimetres (about 35½ inches)</td>
</tr>
<tr>
<td>Women</td>
<td>80 centimetres (about 31½ inches)</td>
<td>88 centimetres (about 34½ inches)</td>
</tr>
<tr>
<td>South Asian women</td>
<td></td>
<td>80 centimetres (about 31½ inches)</td>
</tr>
</tbody>
</table>

For more information on how to lose weight, see our booklet *So you want to lose weight ... for good*.

Control your blood glucose levels

Controlling your blood glucose will help to reduce your risk of coronary heart disease. You can help control your blood glucose levels by doing regular physical activity, eating healthily and keeping to a healthy weight.

If you have type 1 diabetes, you will need daily insulin injections, and many people with type 2 diabetes will
have to take tablets or insulin to control their blood glucose level effectively. It is important that you take these as your doctor has prescribed as this will help to relieve your symptoms and reduce the risk of complications.
Len’s story

Len Drane, now aged 50, had a heart attack when he was 42, and just one year later, after a routine medical check, he was diagnosed with type 2 diabetes.

“My dad had diabetes, so I was already aware of some of the effects it can have on your health, and how important it is to keep it under control. Like many people, I didn’t have any of the symptoms of diabetes, and I am just thankful that it was picked up when it was.

I received great support from the diabetes specialists, but I pored over websites and booklets to educate myself so I could take control of my own condition. I now look more closely at what I am eating, which has helped me to lose more than 3 stone in weight. When it comes to food, it’s all about getting the right balance.

My blood glucose levels are now well controlled. Living with diabetes can be challenging at times, but I make sure it doesn’t stop me doing the things I enjoy the most – like playing golf.”
If you have both diabetes and coronary heart disease

If you have both diabetes and coronary heart disease, the things which help to reduce the risk of coronary heart disease – as described on page 22 – will also help to protect your heart and keep you as healthy as possible.

The treatment of coronary heart disease for people with diabetes is more or less the same as for those who do not have diabetes.

**Regular medicines**

As well as prescribing a statin to control your cholesterol (see page 29), your doctor may also prescribe aspirin and other medicines to help protect your heart and to control any symptoms that you may have. For more information, see our booklet *Medicines for your heart*.

**If your angina gets worse**

If your angina symptoms are not controlled by your medicines, your doctor may advise you to have tests – which may include a **coronary angiogram** – to decide if you need to have either coronary angioplasty or coronary bypass surgery. Both of these are treatments to improve the blood supply to the heart. Your doctor will be able to
discuss with you which treatment is more suitable for you. For more information, see our booklets *Tests for heart conditions, Coronary angioplasty* and *Having heart surgery.*

**If you have a heart attack**

Immediately after a heart attack, it is very important to control your blood glucose well, to limit the damage done and to promote healing. This may mean that your doctor needs to change your usual diabetes treatment. If you have type 2 diabetes, you may need to use insulin for a short time.

Good blood glucose control is also very important in the months after a heart attack.

For more information on heart attacks, see our booklet *Heart attack.*
The annual review

If you have diabetes, you should have a review each year to make sure that you are not developing any of the complications of diabetes (see page 16), including coronary heart disease.

During the annual review, as well as the normal checks for diabetes, the doctor will check your eyes and how well your kidneys are working. He or she will also check your feet to see if there are any problems with your circulation or nerve supply.

Your doctor should check your blood pressure, your weight, your long-term blood glucose control, and your cholesterol and triglyceride levels. These tests will help your doctor decide how well your medicines, lifestyle and diet are working, and whether you need to make any further changes.

As well as the annual review, you may also need to have more frequent check-ups.

For more information, Diabetes UK produces a leaflet called *The care you should receive*. This outlines the 15 checks and services you should receive from the NHS. It is available from www.diabetes.org.uk.
Other insulin-related conditions

Insulin resistance
If you are ‘insulin resistant’, it means that the cells in your body don’t respond properly to insulin. As a result, your body needs more insulin to help glucose enter the cells. The pancreas produces more insulin, but eventually it fails to keep up with the body’s needs. Too much glucose builds up in the bloodstream, making you more prone to diabetes. Many people with insulin resistance have high levels of glucose and insulin circulating in their blood at the same time.

Insulin resistance is not the same as diabetes. However, many people who have insulin resistance go on to develop type 2 diabetes within ten years. People with insulin resistance also have an increased risk of developing coronary heart disease or of having a stroke.

You are at greater risk of having insulin resistance if you have:
- too much fat around your waist
- high blood pressure, or
- a high cholesterol level.

If you are told you have insulin resistance, or that you are at risk of developing it, it is important to do what you can
to prevent diabetes from developing – such as managing your weight, doing more physical activity and controlling your blood pressure and cholesterol levels. See pages 23 to 32.

**Pre-diabetes**

Pre-diabetes is when glucose levels are higher than normal but not high enough to be diagnosed as diabetes. Having pre-diabetes increases the risk of developing type 2 diabetes. Lifestyle changes such as losing weight (if you’re overweight) and doing more physical activity can delay or even prevent type 2 diabetes from developing.

Pre-diabetes is sometimes called borderline diabetes, or impaired glucose tolerance (IGT), or impaired fasting glucose (IFG).

**Metabolic syndrome**

Metabolic syndrome is when a person has several particular conditions at the same time. You are considered to have metabolic syndrome if you are overweight (and in particular if you have too much fat around your middle), and you have any two of the following four conditions:

- high blood pressure
- high triglyceride levels
• low levels of HDL cholesterol (the protective type of cholesterol) in the blood, or
• a high level of fasting blood glucose or type 2 diabetes.

Having these conditions together can be particularly dangerous and greatly increases the risk of developing coronary heart disease, stroke and diabetes.

It is possible to treat metabolic syndrome, and help prevent diabetes and heart disease from developing, by making changes to your lifestyle – in particular, by increasing the level of physical activity that you do and by controlling your body weight and shape (see pages 23 and 30). Some people with metabolic syndrome may need medicines to help control their blood pressure and blood glucose levels, and to improve their cholesterol and triglyceride levels.

**Gestational diabetes**

This type of diabetes can develop during pregnancy – usually during the middle or late stages of the pregnancy. It happens because the body cannot produce enough insulin to meet the extra needs of pregnancy. Gestational diabetes usually disappears after the baby is born, but women who have had gestational diabetes are more likely to develop type 2 diabetes in later life than other women.
How your support can help

BHF scientists are striving to improve our understanding of the link between diabetes and heart disease.

The BHF has supported major international research studies that have made key breakthroughs in discovering how our genes contribute to an increased risk of developing diabetes.

We aim to play a leading role in the fight against heart disease by continuing to support vital research. The number of people dying from heart and circulatory disease each year in the UK is falling. But this means that more people are living with the disease, so there is still a great deal to be done.

Our next big challenge is to discover how to help the heart muscle repair itself, and find a cure for heart failure. Visit our website bhf.org.uk/findthecure to find out about our Mending Broken Hearts Appeal and see how your support can help make a difference.
Heart attack? Know the symptoms … and what to do

A heart attack is when a part of the heart muscle suddenly loses its blood supply. This is usually due to coronary heart disease.

The symptoms of a heart attack

Pain or discomfort in the chest that doesn’t go away.

The pain may spread to the left or right arm …

… or may spread to the neck and jaw.

You may feel sick or short of breath.

Think quick … act fast. Call 999 immediately.
People with diabetes may not always feel the pain or discomfort caused by a heart attack in the same way as someone who does not have diabetes (see page 10). If you have symptoms that don’t match the ones described on the opposite page, but think that you are having a heart attack, call 999 immediately.

What to do if you think someone is having a heart attack

1. Send someone to call 999 for an ambulance immediately.

2. If you are alone, go and call 999 immediately and then come straight back to the person.

3. Get the person to sit in a comfortable position, stay with them and keep them calm.

4. If the person is not allergic to aspirin, give them an adult aspirin tablet (300mg) to chew if there is one easily available. If you don’t have an aspirin next to you, or if you don’t know if the person is allergic to aspirin, just get him or her to stay resting until the ambulance arrives.
For more information

British Heart Foundation website
bhf.org.uk
For up-to-date information on heart disease, the BHF and its services.

Heart Helpline
0300 330 3311 (a similar cost to 01 or 02 numbers)
For information and support on anything heart-related.

Genetic Information Service
0300 456 8383 (a similar cost to 01 or 02 numbers)
For information and support on inherited heart conditions.

Booklets and DVDs
To order our booklets or DVDs:
• call the BHF Orderline on 0870 600 6566
• email orderline@bhf.org.uk or
• visit bhf.org.uk/publications

You can also download many of our publications from our website. For a list of resources available from the BHF, ask for a copy of Our heart health catalogue. Our booklets are free of charge, but we would welcome a donation. (See page 2 for how to make a donation.)
Heart Information Series

This booklet is one of the booklets in the *Heart Information Series*. The other titles in the series are as follows.

Angina
Atrial fibrillation
Blood pressure
Cardiac rehabilitation
Caring for someone with a heart condition
Coronary angioplasty
Diabetes and your heart
Having heart surgery
Heart attack
Heart rhythms
Heart transplantation
Heart valve disease
Implantable cardioverter defibrillators (ICDs)
Keep your heart healthy
Living with heart failure
Medicines for your heart
Pacemakers
Peripheral arterial disease
Physical activity and your heart
Primary angioplasty for a heart attack
Reducing your blood cholesterol
Returning to work with a heart condition
Tests for heart conditions
Our services

For more information about any of our services, contact the Heart Helpline on 0300 330 3311 or visit bhf.org.uk

Emergency life support skills

For information about Heartstart – a free, two-hour course in emergency life support skills, including what to do if someone seems to be having a heart attack – call the Heart Helpline on 0300 330 3311 or visit bhf.org.uk

Heart Matters

Heart Matters is the BHF’s free, personalised service that provides support and information for people who want to improve their heart health. Join today and enjoy the benefits, including heart matters magazine and an online members’ area. Call the Heart Helpline on 0300 330 3311, or join online at bhf.org.uk/heartmatters

Heart support groups

Local heart support groups give you the chance to talk about your own experience with other heart patients and their carers. They may also include exercise classes, talks by guest speakers, and social get-togethers. To find out if there is a heart support group in your area, contact the Heart Helpline on 0300 330 3311.
Make yourself heard – Heart Voices

Heart Voices gives you the skills, confidence and knowledge you’ll need to influence health services for the benefit of heart patients and their families across the UK. It aims to develop a nationwide network of representatives to speak out on behalf of heart patients and their carers, and to provide them with training and opportunities to have their say and get involved.

For information about diabetes

Diabetes UK
Macleod House
10 Parkway
London NW1 7AA
Diabetes UK Careline: 0845 120 2960 (Monday to Friday 9am to 5pm)
Website: www.diabetes.org.uk

Diabetes UK provides information on diabetes, and support for those living with the condition.
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Have your say

We would welcome your comments to help us produce the best information for you. Why not let us know what you think? Contact us through our website bhf.org.uk/contact. Or, write to us at the address on the back cover.
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Coronary heart disease is the UK’s single biggest killer.

For over 50 years we’ve pioneered research that’s transformed the lives of people living with heart and circulatory conditions. Our work has been central to the discoveries of vital treatments that are changing the fight against heart disease.

But so many people still need our help.

From babies born with life-threatening heart problems to the many Mums, Dads and Grandparents who survive a heart attack and endure the daily battles of heart failure.

Join our fight for every heartbeat in the UK. Every pound raised, minute of your time and donation to our shops will help make a difference to people’s lives.

FIGHT FOR EVERY HEARTBEAT
bhf.org.uk