Diabetes and your heart

Heart Information Series Number 22

British Heart Foundation

This is one of the booklets in the *Heart Information Series*. For a complete list of booklets, see page 40.

We welcome your comments on this booklet. Please fill in the feedback form on page 53.

We update this booklet regularly. However, you may find more recent information on our website **bhf.org.uk**

Contents

About this booklet

People with diabetes have a greater risk of developing coronary heart disease than those who do not have diabetes.

We have written this booklet for people who have diabetes, and for their families and friends. It aims to give you basic information about coronary heart disease. It tells you:

- what coronary heart disease is, and how to recognise the symptoms
- what diabetes is, and 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
- what doctors can do so you can have the best possible recovery if you have a heart attack
- what routine checks you should have, and
- what to do if you think someone is having a heart attack.

This booklet is not a substitute for the advice your doctor may give you based on his or her knowledge of your condition.

At the end of some sentences there are small numbers like this one.[11] To find out where we got our information for what we say in that sentence, turn to page 43 and look up the number in the list of *References*.

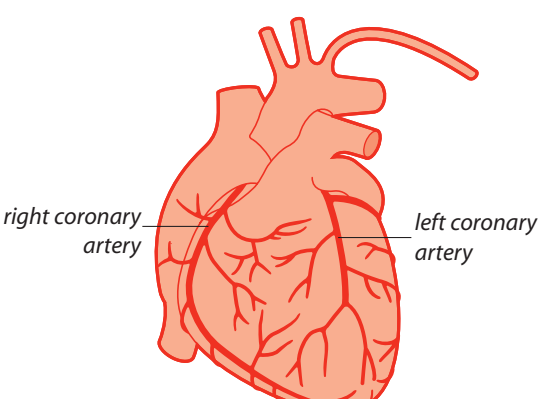
What is coronary heart disease?

How the heart works

Your heart is a muscle about the size of your fist. It beats about 70 times a minute, pumping blood around your body.

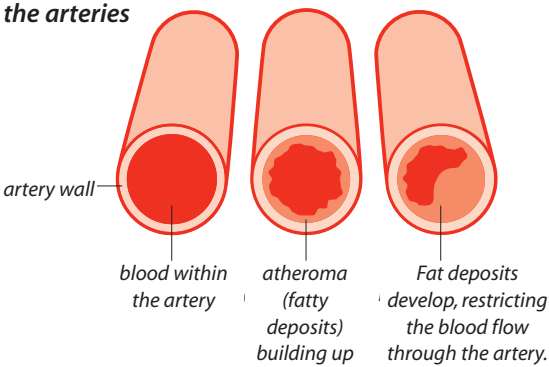
When the blood leaves the heart, it goes to your lungs where it picks up oxygen. The oxygen-rich blood returns to your heart and is then pumped through a system of arteries to provide oxygen to all the organs of your body. The blood then returns to the heart through the veins and is then pumped back to the lungs again. This is called the circulation.

The heart



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

What happens when fatty material builds up in the arteries



Coronary heart disease

Coronary heart disease is the term used to describe the gradual narrowing of the coronary arteries. The arteries usually narrow because of atherosclerosis. Atherosclerosis is a build up of atheroma, or fatty deposits, which develop within the inner lining of the coronary artery. This may mean that the heart muscle does not get enough blood and oxygen. If this happens, it can produce symptoms of chest discomfort or breathlessness known as **angina**. If a coronary artery becomes completely blocked,

it can cause a **heart attack**. We describe the symptoms of angina and heart attack on page 11.

Who is at risk of coronary heart disease?

Coronary heart disease is Britain's biggest killer. Almost one in five men and one in six women die from this disease.[1] However, for people with diabetes the risk is much higher.

Among those who have diabetes, women have a greater risk of developing coronary heart disease than men. Women with diabetes are three to five times more likely to develop coronary heart disease than women without diabetes. Men with diabetes are two to four times more likely to develop coronary heart disease than men without diabetes.[1]

People from south Asia living in the UK are at least five times more likely to have diabetes than the general population.[2] As a result, they have a greater risk of developing coronary heart disease.

However, if you do have diabetes, there is a lot you can do to prevent coronary heart disease from developing – or to reduce its effects.

The good news is that a healthy lifestyle and good treatment can reduce the risk substantially. There

are several known 'risk factors' for heart disease, many of which you can do something about. (A 'risk factor' is something which increases someone's risk of getting a disease.) The major risk factors for coronary heart disease are:

- physical inactivity (lack of exercise)
- smoking
- abnormal blood cholesterol and triglyceride levels
- high blood pressure
- obesity (being very overweight)
- a family history of coronary heart disease, and
- diabetes.

What are the symptoms of coronary heart disease?

The box on the next page describes the symptoms that people often get with a typical angina attack and a typical heart attack. However, the symptoms can vary from person to person.

Having diabetes can make it more difficult to diagnose a heart attack. For example, having no pain but a general feeling of being unwell or sweating can be a symptom of a heart attack, but in people with diabetes, these symptoms can be confused with the symptoms of a hypoglycaemic episode (sometimes called a 'hypo'). This makes the diagnosis more difficult. (A hypoglycaemic episode happens when the level of glucose in the blood falls too low. When this happens, the person may get symptoms such as sweating, feeling shaky, feeling his or her heart pounding and confusion.)

What are the symptoms of angina?	What are the symptoms of a heart attack?
Heaviness or tightness in the centre of the chest, which may spread to the arms, neck, jaw, back or stomach. Or it may affect just the neck, jaw, arm or stomach.	The type of discomfort or pain is similar to angina but is sometimes more severe. There may also be sweating, light-headedness, feeling sick or shortness of breath.
Angina often happens when the person is doing a physical activity, or is under emotional stress.	A heart attack can happen at any time, including while the person is resting.
Symptoms usually go away within about 10 to 15 minutes.	If the symptoms continue – especially if they last more than 15 minutes – it may be a heart attack. However, some heart attacks happen just a few minutes after the symptoms start.
Symptoms are relieved by resting, or by using a nitrate tablet or spray.	Symptoms are not completely relieved by resting or by using a nitrate tablet or spray.

If you think you are having a heart attack, dial 999 for an ambulance and then call your doctor.

If you have diabetes and you are not sure whether certain symptoms are due to hypoglycaemia or a heart attack, it is useful to do a blood glucose test.

- If the test shows that the level of glucose in the blood is less than 4 mmol/l, it is likely that you are having a hypoglycaemic attack. (Mmol/l is short for millimols per litre.) You should treat this in the normal way by taking a quick-acting carbohydrate, such as glucose tablets or a sugary drink, followed by a longer acting carbohydrate such as a sandwich or a bowl of cereal.
- If the test gives a reading higher than 4 mmol/l, it is unlikely that you are hypoglycaemic and so you may be having a heart attack. So you should call 999 for an ambulance, or someone should call an ambulance for you, and then call your doctor.

What is diabetes?

Diabetes happens when the level of glucose (sugar) in the blood is too high because the body is unable to use it properly. This is because the body's method of converting glucose into energy is not working as it should.

Glucose is produced when our body digests starchy foods such as bread, rice, potatoes, and sugar and other sweet foods. The liver also makes glucose. The blood carries glucose to all the cells. A hormone called insulin helps the glucose to enter the cells, where the body uses it as a fuel. Insulin is made in the pancreas – a large gland that lies behind the stomach. As the insulin lets the cells take glucose out of the blood, the amount of glucose left in the blood goes down.

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 their cells lose the ability to use the insulin.

In people with diabetes, the cells become starved of glucose because they cannot get it from the blood. At the same time, because the glucose

cannot get into the cells, the level of glucose in the blood goes up.

Who is at risk of developing diabetes?

It is estimated that almost 1.9 million adults in the UK have been diagnosed as having diabetes.[3] And there are over half a million more adults who have diabetes but don't know it, because it hasn't been diagnosed.[3] This means that altogether there are around 2.5 million adults in the UK with diabetes. The number of people with diabetes is increasing and it is estimated that by 2010 about 3 million people in the UK will be diagnosed with diabetes.[3]

Type 1 diabetes

Type 1 diabetes is less common than type 2 diabetes and it usually develops in children and young adults. Type 1 diabetes probably happens because the body's own immune system (the cells that fight infection) attacks the pancreas and destroys its ability to make insulin. The cause of this is probably viruses or other infections, but nobody is really sure.

Type 2 diabetes

Most people with diabetes – about nine out of every 10 – have type 2 diabetes.[4] This condition tends to develop gradually after the age of 40.

In many cases obesity is closely linked to type 2 diabetes and this may be an important factor in the increasing number of cases of type 2 diabetes.

It is a worrying trend that, in recent years, type 2 diabetes is being diagnosed more and more in younger people, and even in children. It seems that this is largely due to the fact that children these days lead less active lifestyles.

Diabetes is more common in people living in the most deprived parts of the country than in those living in more wealthy areas. Also, some ethnic groups have a higher rate of diabetes, particularly south Asian and black African-Caribbean people.

Both genetic and environmental factors contribute to the development of diabetes. People are more likely to develop type 2 diabetes if they have some or all of the following risk factors:

- not being physically active enough
- being overweight
- a family history of type 2 diabetes
- previous diabetes in pregnancy (gestational diabetes).

The risk of developing type 2 diabetes can be significantly reduced by lifestyle changes which increase physical activity and reduce body weight.

What are the symptoms of diabetes?

In type 1 diabetes, symptoms develop quickly over a few weeks. However, in type 2 diabetes the symptoms often develop gradually over many years and so you may not think they are abnormal. Different people develop different combinations of symptoms.

The range of symptoms for both types of diabetes are:

- thirst
- passing more urine than usual, particularly at night
- tiredness
- unexplained weight loss
- blurred vision
- itching in the genital area (or regular episodes of thrush).

These symptoms are the direct result of having too much glucose in the blood and not enough in the cells. However, over many years, the high levels of glucose can also damage many different parts of the body:

- in the heart and blood vessels, causing coronary heart disease, strokes and peripheral arterial disease (disease of the arteries that carry blood to different parts of the body such as the legs)

- in the eyes, causing reduced vision and sometimes leading to blindness
- in the kidneys, which gradually work less well
- in the feet, causing ulcers
- in the nerves, causing many symptoms such as loss of sensation (especially in the feet and legs), pins and needles, and sexual impotence.

The good news is that you can prevent, delay or reduce these problems by lifestyle changes and managing your diabetes well. Good management includes keeping good control of your blood glucose and blood pressure levels, and going for a review each year. We explain more about this annual review on page 35.

How is diabetes diagnosed?

If you have some of the risk factors for diabetes (see page 15), you should ask your doctor for a simple screening test to see whether you have diabetes. Remember, even if you don't have any symptoms, you may still have diabetes.

Your doctor may take a blood sample straight away, or he or she may ask you to go back on another day, having not eaten anything since the night before. Your doctor will be able to measure the amount of glucose in your blood and, depending on the level, will be able to tell if you have diabetes.

You are likely to have diabetes if you have diabetes symptoms (passing a lot of urine and being very thirsty) and unexplained weight loss, and if your blood glucose level is:

- 11.1 mmol/l or over, after eating, or
- 7 mmol/l or over, after fasting (not eating anything for a certain amount of time), or
- 11.1 mmol/l or over, two hours after an oral glucose tolerance test.[5] (For this test you will be asked not to eat anything for a certain amount of time. Your blood glucose level is measured and then you are given a drink containing a certain amount of glucose. Your blood glucose

levels are then measured at intervals for two hours to see how your body is dealing with the glucose you've absorbed.)

If you don't have any symptoms of diabetes, your doctor should not diagnose diabetes on the basis of just one blood glucose measurement, so he or she will ask you to go back for another test on another day.

What treatment do people receive for diabetes?

If you have type 1 diabetes, your doctor will need to start treating you with insulin straight away. He or she may also refer you to a hospital doctor.

If you have type 2 diabetes, the first line of treatment is normally to try and lose weight, become more physically active and eat a more healthy diet. Your doctor or nurse will help you with this.

Some people may need to take medicines for their diabetes. There are different kinds of medicines that work in different ways. Your doctor will explain which medication is best for you. Many people with type 2 diabetes eventually need to have insulin injections to control their diabetes, but this is unlikely to happen when you are first diagnosed.

Why does diabetes affect the heart?

Diabetes seems to act in several ways to damage the heart.

- High glucose levels in the blood affect the walls of the arteries, making them more likely to develop atheroma (see page 7).
- Diabetes increases the damage done by the major coronary heart disease risk factors of smoking, high blood pressure and high blood cholesterol.
- People with type 2 diabetes often have higher triglyceride levels and lower levels of HDL cholesterol (the 'protective' type of cholesterol). We explain why this is important on page 26.
- People with diabetes are more likely to have high blood pressure.
- Diabetes can affect the heart muscle itself, making it a less efficient pump.
- Diabetes can affect the nerves to the heart, so that symptoms of angina may not be felt in the usual way. This leads to delay and difficulties in diagnosing angina and heart attacks.

What can I do to reduce my risk of coronary heart disease?

Your doctor can work out your risk of developing coronary heart disease by using a special chart, and will show you how you can reduce your risk by lifestyle changes and effective treatment.

Your doctor will prescribe medicines to treat some of the risk factors that you may have. For example, he or she may give you medicine to lower your blood cholesterol level. Diabetes alone is considered a significant risk factor for coronary heart disease so, if you have diabetes, you will probably be given medicines to reduce your risk of coronary heart disease – such as aspirin to reduce the risk of blood clotting.

Controlling blood glucose and blood pressure well is essential for preventing the long-term problems of diabetes, such as damage to the eyes, kidneys and feet. However, this is not enough to prevent coronary heart disease. The major risk factors for coronary heart disease need to be controlled by a combination of effective treatment and the following lifestyle changes.

Be more physically active

Physical inactivity is not only a major risk factor for coronary heart disease; it is also a risk factor for developing type 2 diabetes. If you already have diabetes, physical activity may help to reduce the amount of tablets or insulin that you need to take.

The aim is to gradually increase your physical activity until you are doing 30 minutes of moderate intensity activity on at least five days a week. Moderate intensity means activity that makes you feel warm and breathe slightly more heavily than usual. The type of activity that helps both your heart and your diabetes is moderate, rhythmic exercise such as brisk walking, cycling or swimming. Walking is one of the best forms of activity. It's easy to do, you don't need to wear any special clothes, and it's easy to fit into your everyday life.

If you already have coronary heart disease, it is important to talk to your hospital doctor, nurse or GP about the best way to increase your level of physical activity. There are many different ways to be more physically active and it's important to find activities which are safe and right for you. You may be asked to have an exercise ECG test, either on a treadmill or a stationary bike. This will help your

doctor to work out how much activity you can do safely at first.

If your diabetes is treated with insulin or tablets, you may find that your blood glucose level falls quickly during or after exercise. It is important to monitor your blood glucose carefully as you start to build up your level of physical activity because you may need to change the dose of your medication. Your doctor can advise you about this. You should always have some form of fast-acting carbohydrate with you when you take exercise, such as glucose tablets or a sugary drink, in case your glucose level falls.

- 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 couple of minutes slowing down gradually.
- Stop if you get any pain or feel dizzy, sick or unwell, or very tired.
- Build up your activity level gradually.
- Dress warmly when doing any physical activity in very cold or windy weather.

For more information, see our booklet *Physical activity and your heart*.

If you smoke, stop smoking

Smoking is a major cause of coronary heart disease, especially among younger people. Smoking cigarettes is particularly dangerous, but smoking pipes and cigars also increases the risk. Stopping smoking is the single most important thing a smoker can do to live longer.

Your GP, practice nurse or pharmacist can give you advice, including information on nicotine-replacement products such as chewing gum, microtabs, lozenges and skin patches, or medicines such as bupropion (Zyban) and local NHS stop-smoking services.

The **BHF Smoking Helpline** – on **0800 169 1900** – can offer information on stopping smoking and support for people who are finding it hard to stop.

You can also get practical help in stopping smoking and information on stop-smoking support services from **Quitline** on **0800 00 22 00**.

Quitline also runs the following helplines in different languages.
Bengali 0800 00 22 44 (Mondays 1pm to 9pm)
Gujerati 0800 00 22 55 (Tuesdays 1pm to 9pm)
Hindi 0800 00 22 66 (Wednesdays 1pm to 9pm)
Punjabi 0800 00 22 77 (Thursdays 1pm to 9pm)

Urdu 0800 00 22 88 (Sundays 1pm to 9pm)
Turkish and Kurdish 0800 00 22 99 (Thursdays and Sundays 1pm to 9pm).

Control your blood cholesterol and triglyceride levels

Cholesterol and triglycerides are fatty substances that are mainly made in the body. The liver makes them from the saturated fats in the food we eat.

Cholesterol plays a vital role in how every cell in the body works. However, too much cholesterol in the blood can be harmful. There are two main forms of cholesterol:

- low-density lipoproteins (LDL) – the 'bad cholesterol' – which carry cholesterol from the liver to the rest of the body, and
- high-density lipoproteins (HDL) – the 'good cholesterol' – which return the spare cholesterol to the liver.

Triglycerides in the body come from fats in food. Calories that are eaten and are not used immediately are converted into triglycerides and transported to fat cells where they are stored.

'Blood lipids' is a name for all the fatty substances in the blood, including HDL cholesterol, LDL cholesterol and triglycerides.

If you have high levels of both triglycerides and blood cholesterol, you run a greater risk of coronary heart disease.[6] The risk is particularly high if you also have a low level of HDL 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 5 mmol/l
- an LDL cholesterol of less than 3.0 mmol/l
- an HDL cholesterol of over 1 mmol/l, and
- a triglyceride level of less than 2.3 mmol/l.[7]

A healthy diet will help to reduce your cholesterol level. This means that you need to do the following.

- Cut right down on saturated fats and replace them with moderate amounts of monounsaturated fats and polyunsaturated fats. Saturated fat is found mostly in meat and dairy products. It is also found in ghee, coconut and palm oil. So for example, if you are choosing oil, choose olive oil or rapeseed oil rather than coconut oil or palm oil.
- Reduce the total amount of fat you eat. For example, you could cut down on the amount of fatty foods you eat, such as pastries, crisps and biscuits, and replace them with healthier alternatives such as fruit. Or at mealtimes you

may be able to cut down on the amount of fatty foods you eat by filling up with starchy foods such as bread, pasta or rice instead.

- Eating oily fish – such as sardines, mackerel or salmon – twice a week may help to reduce triglyceride levels.

Doing regular physical activity can also help improve cholesterol levels.

If you have diabetes, you will probably need to take a statin drug to reduce your cholesterol levels, and perhaps a fibrate drug to control your triglyceride levels.

For more information on cholesterol and healthy eating, see our booklets *Eating for your heart* and *Reducing your blood cholesterol*. Diabetes UK also produces a helpful range of cookbooks and has a range of recipes on their website. (For contact details see page 42.)

Control high blood pressure

High blood pressure is common in people with diabetes and it is essential to control it. If you have diabetes, your goal is to have a blood pressure below 130/80mmHg, or lower than that if your kidneys are already damaged.[8]

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

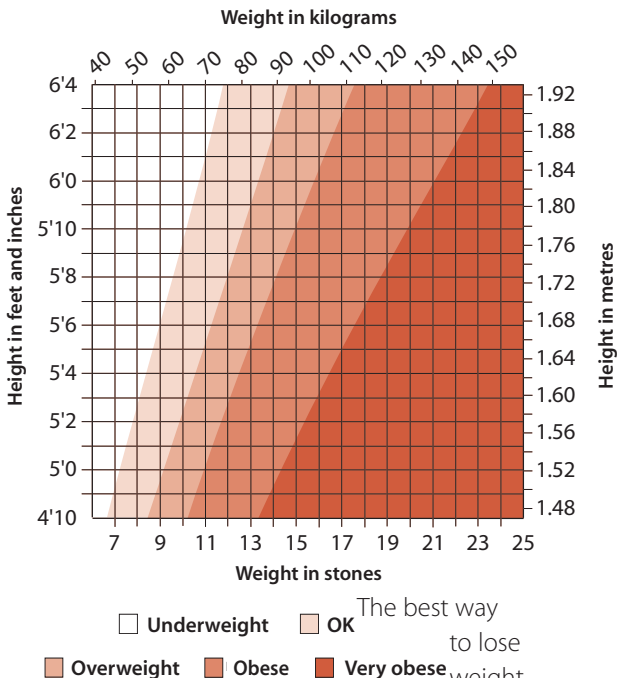
Control your weight

If you are overweight, losing weight will help lower your blood pressure, lower cholesterol levels and help control your diabetes. To find out if you need to lose weight, check the chart on the next page. If you fall into the overweight, fat or obese category, you need to lose some weight.

Another way of finding out if you need to lose weight is simply to measure around your waist at the narrowest part. If you're a man, you should aim for a waist measurement of less than 37 inches (94 centimetres). If you're a woman, you should aim for less than 32 inches (80 centimetres).

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 *'Treat Obesity Seriously'*, by J Garrow. 1981.
By permission of Churchill Livingstone

is to be more physically active, cut down on the amount of fat in your diet, and cut down on sweet foods and drinks. Don't try to lose weight too quickly. It's better to lose the weight slowly and steadily. People who follow a weight loss programme that aims to lose a total of 5 to 10 kilos (10 to 20 pounds) – by losing between half a kilo and 1 kilo (1 to 2 pounds) a week – usually achieve their target weight loss.[9]

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

Other lifestyle tips

Fruit and vegetables

Eating a diet that is rich in a range of vegetables and fruit can lower your risk of coronary heart disease.[10] Eat at least five portions of fruit and vegetables a day. They can be fresh, frozen or tinned. There is no evidence that taking vitamin and mineral supplements has the same effect.

Relaxation

It is also useful to learn how to relax. Some people find that yoga or other relaxation techniques really help. You also need to become aware of situations that make you feel extra strain at home or at work

and try to find ways to deal with this. For example, you could go for a walk, use a relaxation technique, meet up with friends, or make sure that you have some time for yourself each day.

Treatments for people who have both diabetes and coronary heart disease

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

Regular medicines

If you are over the age of 50, have been diagnosed with diabetes and also have other risk factors for coronary heart disease, your doctor may prescribe daily aspirin for you (75mg a day).[8] Check with your GP before you start taking aspirin regularly.

If you have diabetes, your blood pressure target of 130/80 is lower than the target for people without diabetes (see page 28). You may need to take medicines to help reduce your blood pressure.[8]

If your angina gets worse

If your angina gets worse, your consultant may advise you to have either coronary angioplasty or coronary artery bypass surgery. Coronary angioplasty is a treatment to make your blood vessels wider. In coronary artery bypass surgery the blocked arteries are replaced with grafts. Your doctor will be able to discuss with you which

treatment is more suitable for you. For more information, see our booklet *Coronary angioplasty and coronary bypass 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 changing your usual diabetes treatment, and perhaps using insulin.

It is also very important to control your blood glucose well in the months after a heart attack. Further changes to your usual medicines may be needed. For example, you might need to use insulin.

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, including coronary heart disease.

During the annual review, as well as the normal checks for diabetes, your doctor should check your blood pressure, weight and general circulation. He or she will check your long-term blood glucose control and should also check your cholesterol and triglyceride levels. These tests will help your doctor decide how well your medications, lifestyle, and diet are working and whether you need to make further changes.

As well as the annual review, you may also need to have more frequent check-ups to make sure that your diabetes control is satisfactory.

What to do if someone has a heart attack or cardiac arrest

Ideally, everyone should know what to do if someone has a heart attack or cardiac arrest. About three in every four cardiac arrests happen away from hospital and there may be nobody else around to help.

The British Heart Foundation co-ordinates courses around the country, called *Heartstart UK,* to train people in emergency life support. For more details see page 41.

If you think someone is having a heart attack

1 Get help immediately.
2 Get the person to sit back in a comfortable position.
3 Phone 999 for an ambulance.

If a person seems to be unconscious

- Approach with care. To find out if the person is conscious, gently shake him or her, and shout loudly, 'Are you all right?'
- If there is no response, shout for help.
- You will need to assess the casualty and take suitable action. Remember **A, B, C – Airway, Breathing, Circulation.**

A *Airway*

Open the person's airway by tilting the head back and lifting the chin.

B *Breathing*

Check
Look, listen and feel for signs of breathing for up to 10 seconds.

Action: Rescue breathing
If the person is unconscious and not breathing, phone 999 for an ambulance.

Put the person face upwards on the floor.

Open the airway again and give two of your own breaths to the person. This is called 'rescue breathing'.

Close the person's nostrils with your fingers and thumb and blow into the mouth. Make sure that no air can leak out and that the chest rises and falls.

C *Circulation*

Check

Check for signs of circulation. This means checking for signs of normal breathing, coughing or movement. Take no more than 10 seconds doing this.

Action: Chest compression

If there are no signs of a circulation, or if you are at all unsure, start chest compression.

Find the notch at the bottom of the breastbone. Measure two fingers' width above this. Place the heel of one hand there. Place your other hand on top. Press down firmly and smoothly 15 times. Do this at a rate of about 100 times a minute – that's faster than one each second.

Repeat 2 rescue breaths and then 15 chest compressions. Keep doing the 2 rescue breaths followed by 15 chest compressions until:

- the casualty shows signs of life, or
- professional help arrives, or
- you become exhausted.

For more information

British Heart Foundation website

bhf.org.uk

For up-to-date information on the BHF and its services.

Heart Information Line • 08450 70 80 70

(A local rate number.)

An information service for the public and health professionals on issues relating to heart health.

Publications and videos

The British Heart Foundation (BHF) also produces other educational materials that may interest you. To find out about these, or to order your **Publications and videos catalogue**, or to order publications, please go to **bhf.org.uk/publications,** call the **BHF Orderline on 0870 600 6566** or e-mail **orderline@bhf.org.uk**. You can download many of our publications from **bhf.org.uk/publications**.

Our publications are free of charge, but we would welcome 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.

1 Physical activity and your heart
2 Smoking and your heart
3 Reducing your blood cholesterol
4 Blood pressure
5 Eating for your heart
6 Angina
7 Heart attack and rehabilitation
8 Living with heart failure
9 Tests for heart conditions
10 Coronary angioplasty and coronary bypass surgery
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Heart health magazine

Heart health is a free magazine, produced by the British Heart Foundation especially for people with heart conditions. The magazine, which comes out four times a year, includes updates on treatment, medicines and research and looks at issues related to living with heart conditions, like healthy eating and physical activity. It also features articles on topics such as travel, insurance and benefits. To subscribe to this **free** magazine, call **0870 600 6566**.

Heartstart UK

For information about a free, two-hour course in emergency life-support, visit our website at bhf.org.uk or contact Heartstart UK at the British Heart Foundation. The course teaches you to:

- recognise the warning signs of a heart attack
- help someone who is choking or bleeding
- deal with someone who is unconscious
- know what to do if someone collapses, and
- perform cardiopulmonary resuscitation (CPR) if someone has stopped breathing and his or her heart has stopped beating.

About diabetes

Diabetes UK

10 Parkway
London NW1 7AA
Diabetes UK Careline: 0845 120 2960 (a local rate number) Monday to Friday 9am to 5pm
Textphone: 020 7424 1031
Website: www.diabetes.org.uk
E-mail: careline@diabetes.org.uk

The Diabetes UK Careline provides confidential support and information on all aspects of diabetes. It also provides an interpreting service if English is not your first language.

Diabetes UK produces a wide range of leaflets on all aspects of diabetes, including diet, medicines, insulin, hypoglycaemia, alcohol and neuropathy (conditions of the nervous system). Some of their leaflets are available in the main Asian languages and Chinese. Diabetes UK also produces a magazine called *Balance,* which comes out six times a year. For details, and for a Diabetes UK catalogue, contact:
Diabetes UK Distribution Department
PO Box 1057
Bedford MK42 7XQ.
Freephone: 0800 585088

References

1 From: *Coronary Heart Disease Statistics* (pages 20-23), by S Petersen, V Peto, P Scarborough and M Rayner. Published in 2005 by the British Heart Foundation, London.

2 From: *The Health of Minority Ethnic Groups 1999*, by the Joint Health Surveys Unit. Published in 2001 by The Stationery Office, London.

3 From: *Health Survey for England 2003*, by the Joint Health Surveys Unit. Published in 2004 by The Stationery Office, London.

4 From: *Coronary Heart Disease Statistics. Morbidity Supplement*, by M Rayner, S Petersen, M Moher and others. Published in 2001 by the British Heart Foundation, London.

5 From: 'Clinical impact of the new criteria for the diagnosis of diabetes mellitus', by AFB Kernohan, CG Perry and M Small. Published in 2003 in *Clinical Chemistry and Laboratory Medicine*, volume 41, issue 9, pages 1239-1245.

6 From: 'Dyslipidemia in type 2 diabetes', by RM Krauss and PW Siri. Published in 2004 in *Medical Clinics of North America*, volume 88, issue 4, pages 897-909.

7 From: *Management of Type 2 Diabetes: Management of Blood Pressure and Blood Lipids. NICE Inherited Clinical Guideline H.* Published in 2002 by the National Institute for Clinical Excellence. Accessed from: www.nice.org.uk.

8 From: 'Guidelines for the management of hypertension: report of the fourth working party of the British Hypertension Society 2004 (BHS-IV)'. Published in 2004 in the *Journal of Human Hypertension*, volume 18, pages 139-185.

9 From: 'A meta analysis of the past 25 years of weight loss research using diet, exercise or diet plus exercise intervention', by WC Miller, DM Koceja and EJ Hamilton. Published in 1997 in the *International Journal of Obesity*, volume 21, pages 941-947.

10 From: 'Consumption of fruits and vegetables in relation to the risk of developing acute coronary syndromes: the CARDIO2000 case-control study', by DB Panagiotakos, C Pitsavos, P Kokkinos and others. Published in 2003 in the *Nutrition Journal*, volume 2 (2), pages 1475-2891.

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The British Heart Foundation (BHF) is the leading national charity fighting heart and circulatory disease – the UK's biggest killer. The BHF funds research, education and life-saving equipment, and helps heart patients return to a full and active way of life.

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Notes

Technical terms

angina	Heaviness or tightness in the centre of the chest, which may spread to the arms, neck, jaw, back or stomach. It is caused when the arteries become so narrow that not enough oxygen-containing blood can reach the heart muscle when it needs it – such as during exercise.
arteries	Vessels which carry blood from the heart to other parts of the body.
atheroma	Fatty material that can build up within the walls of the arteries.
blood pressure	The pressure of blood in the arteries. A blood pressure measurement gives two numbers, for example 130/80. The first figure is the highest pressure, which happens when the beat of your heart forces blood around the circulation. The second number is the lowest pressure, which happens between heartbeats.
cardiac arrest	When the heart stops pumping.
cardiopulmonary resuscitation	Action to restore the breathing and circulation.
cholesterol	A fatty substance mainly made in the body by the liver. Cholesterol plays a vital role in how every cell in the body works. However, too much cholesterol in the blood can increase the risk of getting coronary heart disease.

coronary arteries	The arteries that supply the blood to the heart muscle.
coronary heart disease	When the walls of the coronary arteries become narrowed by a gradual build-up of fatty material called atheroma.
defibrillation	A large electric shock given through the chest wall to the heart, to restore a normal heartbeat.
diabetes	A disease caused by a lack of insulin (a chemical in the body), or an increased resistance of the body to insulin.
exercise ECG test	A test to record the rhythm and electrical activity of the heart, carried out while the person is taking exercise.
fibrate	A drug used mainly to reduce triglyceride levels and also to reduce cholesterol levels.
heart attack	When one of the coronary arteries becomes blocked by a blood clot and part of the heart is starved of oxygen.
high blood pressure	When the pressure of the blood in the arteries is too high. See 'blood pressure'.
hypertension	High blood pressure.
nitrate	A drug to relieve angina.
saturated fat	A type of fat found mainly in food from animal sources, especially dairy and meat products.

stroke	When the blood supply to the brain is interrupted either by atheroma in one of the arteries to the brain, or by bleeding from one of these arteries into the brain. Symptoms can include temporary or permanent loss of the use of one or more limbs, or loss of speech.
triglycerides	A type of fatty substance found in the blood.

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Your comments please

We would be very interested to hear your views about this booklet. Please fill in this form and send it to:

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