Peripheral arterial disease

Heart Information Series Number 16

This is one of the booklets in the *Heart Information Series.* For a complete list of booklets, see page 33.

We welcome your comments on this booklet. Please fill in the feedback form on page 41.

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

Contents

About this booklet	5
What is peripheral arterial disease?	6
What symptoms does it cause?	9
Why did I get peripheral arterial disease?	10
Will it get worse?	12
What can I do to help myself?	13
What can my doctor do to help me?	22
What are the risks linked with peripheral arterial disease?	29
A final word	31
For more information	32
About the British Heart Foundation	36
Technical terms	39
Index	40
Your comments please	41

About this booklet

If you cannot walk very far without getting pains in the back of your legs, thighs or buttocks, your doctor may have told you that you have peripheral arterial disease (PAD) or intermittent claudication. ('Claudication' comes from the Latin word for 'to limp'. 'Intermittent' means that it stops and starts again.) The pain from intermittent claudication is one of the symptoms of peripheral arterial disease.

This booklet explains:

- what causes peripheral arterial disease, and
- what you can do to prevent it from getting worse.

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

At the end of some sentences in this booklet there are small numbers like this one.[5] To find out where we got our information for what we say in that sentence, turn to page 35 and look up the number in the list of *References*.

What is peripheral arterial disease?

Peripheral arterial disease is a condition that affects your arteries. Arteries are the blood vessels that take oxygen-rich blood from the heart to all parts of the body.

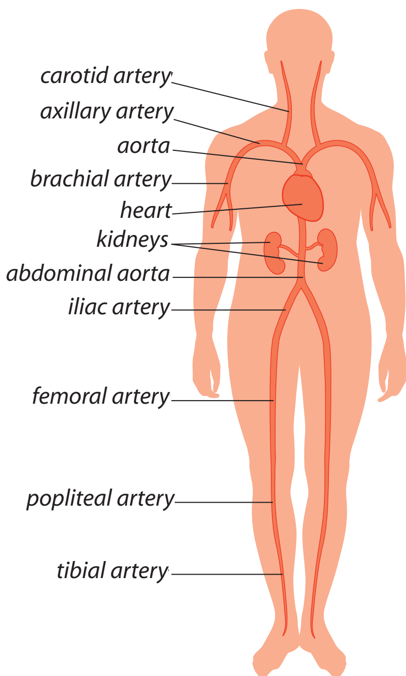
Peripheral arterial disease is caused by a gradual build-up of fatty material within the walls of the artery. This process is called 'atherosclerosis' and the fatty material is called 'atheroma'.

Some people have peripheral arterial disease in the arteries that supply blood to the legs. In time, these arteries may become so narrow that they cannot deliver enough oxygen-containing blood to the legs.

Peripheral arterial disease may also affect other arteries such as the abdominal aorta, the carotid arteries (in the neck), the iliac arteries (near your pelvis), or the arteries in either one or both legs. (See the illustration on the next page.)

The presence of atheroma can also cause a blood clot (or thrombus) to form, blocking off the artery completely.

The main arteries



In peripheral arterial disease, the arteries which supply blood to the legs become narrowed or completely blocked off.

People with peripheral arterial disease are also likely to have narrowed arteries in other parts of the body. If there is narrowing in the coronary arteries (the arteries which supply blood and oxygen to the heart muscle), this may lead to discomfort or pain in the chest. This is called angina.

If the atheroma in a coronary artery cracks, a blood clot can form and cause a heart attack. If the arteries to the neck are affected, this can interfere with the flow of blood to the brain and may cause a stroke. (For more information about stroke, contact the Stroke Association. The address is on page 34.)

What symptoms does it cause?

The most common symptom of peripheral arterial disease is pain in the calf muscles, thighs or buttocks when you are walking or exercising. This complaint is called intermittent claudication. It happens when the legs aren't getting enough oxygen-containing blood. Slowing down or stopping what you are doing reduces the amount of oxygen that your leg muscles need. This means that the pain eases off and you can then carry on walking.

Telling your doctor where you get the pain can help him or her to work out which artery may be affected. However, some people don't get any symptoms.

As the disease progresses, the pain may become continuous and prevent you from sleeping. The only way to relieve the pain may be to hang your leg down from the bed. This form of pain is called rest pain and often feels worse in your toes. If this happens to you, tell your doctor. If you ignore this symptom, it is possible that you might develop gangrene in your leg.

Why did I get peripheral arterial disease?

Peripheral arterial disease takes many years to develop. The most important risk factor is smoking. (A 'risk factor' is something that increases your risk of getting a disease.) Smokers have a 10 to 16 times greater risk of developing peripheral arterial disease than people who have never smoked.[1] And the more you smoke, the more severe the disease of the arteries is likely to be.

Other lifestyle factors that contribute to the atheroma that builds up in the arteries are:

- a diet that is high in fat (which can lead to high blood cholesterol levels)
- being overweight or obese, and
- not doing enough physical activity.

Some families have genes which cause them to have high levels of cholesterol in the blood. This can mean that their artery walls take up more of the harmful types of cholesterol, causing the arteries to narrow.

Other medical problems which contribute to peripheral arterial disease developing are having high blood pressure, and diabetes.

Peripheral arterial disease is much more common in men than in women. However, the difference in risk between men and women is gradually changing. This is because the number of women with peripheral arterial disease is increasing, possibly because fewer women are giving up smoking. The disease is more common among older people, with symptoms usually starting between the ages of 50 and 70. However, the disease can occur at a younger age too and, if it does, it usually progresses more quickly.

Will it get worse?

Most people who have intermittent claudication tend to continue having the same symptoms for many years. However, it is possible to relieve the symptoms, and even achieve pain-free walking, by making certain changes to your lifestyle. (See *What can I do to help myself?* on the next page.)

In some people, the pain gets worse when walking. The pain may also start after walking a shorter distance than before.

Other signs of the disease getting worse include:

- getting pain in your foot or toe
- your toes turning blue or white when you are resting, and
- getting small ulcers on your foot or ankle which don't heal.

If the pain gets worse or if ulcers develop, you should see your doctor immediately.

People with peripheral arterial disease also have a higher than average risk of developing coronary heart disease or having a stroke.

What can I do to help myself?

There are lots of things you can do. Self-help is the major part of treatment.

If you smoke, stop smoking

If you are still smoking, you must stop. Many people find it hard to quit, but there are many aids now available which can increase your chances of success. There are two main types of aids:

- nicotine replacement therapy, and
- bupropion (Zyban).

Nicotine replacement therapy

Nicotine replacement therapy (NRT) comes in the form of patches, gum, lozenges, microtabs (small tablets, the size of a sweetener, that you place under your tongue), nasal spray or inhalator.

These products are designed to help you break the habit of smoking by providing a reduced dose of nicotine to help you overcome withdrawal symptoms. Using NRT can double the chance of stopping smoking. It can be a big help to you in the early days of stopping smoking.

Your GP may be able to give you a prescription for nicotine replacement. Or, you can buy the products from your pharmacist without a prescription. If you are entitled to free prescriptions, many GP services and local stop-smoking teams will give you a voucher for at least one week's free supply of nicotine replacement therapy. If you have a heart problem, or have had one in the past, you must check with your doctor or pharmacist before starting to use nicotine replacement.

It's very important that you stop smoking completely while using nicotine replacement therapy.

Bupropion (Zyban)

This is also a successful aid to stopping smoking. It acts on the pathways in the brain responsible for nicotine addiction. The course of tablets usually lasts for eight weeks. Bupropion is available on NHS prescription, so ask your GP about it.

Alternative therapies

These include therapies such as hypnotherapy and acupuncture.

Stop-smoking groups

Stop-smoking groups have specialists who can offer support and advice with stopping smoking. Sometimes these are called 'stop-smoking clinics' or 'smoking cessation clinics'. To find out if there is a group near you, ask your GP or practice nurse.

Bypass surgery or angioplasty and smoking

It is particularly important to stop smoking if you have had bypass surgery or an angioplasty. (These are two types of treatment to improve the blood supply to your legs – see pages 24 to 28.) This is because, for people who continue smoking, there is a much higher chance that the arteries will become narrow again.

For more information on stopping smoking

For more advice about stopping smoking see our booklet *Smoking and your heart.* Or try one of the helplines or websites listed below.

The BHF Smoking Helpline 0800 169 0 1900	Can offer information on stopping smoking, and support for people who are finding it hard to stop.
QUITLINE® Freephone 0800 00 22 00	A free helpline, staffed by trained smoking cessation counsellors. For help and advice about stopping smoking.

The following helplines provide information and support 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)

Websites

QUIT® website: www.quit.org.uk

ASH (Action on Smoking and Health) website:
www.ash.org.uk

Both these websites offer information about smoking and advice on how to stop.

Gradually build up the amount of activity you do

Regular physical activity such as walking will help you a lot. It helps to increase the amount of oxygen your leg muscles take up, which means that you'll be able to walk further and your legs will become fitter.

Try to walk as much as you can. Walk through the discomfort as far as you can manage, as this will help you to increase your pain-free walking distances. It may also help to encourage new blood vessels to grow around the narrowed or blocked artery. Try to walk a little further each day until you are walking briskly for 30 minutes a day on at least five days a week.

Regular physical activity also increases the amount of high density lipoprotein cholesterol (HDL – the 'good' type of cholesterol) in the blood.

While you are building up your walking time (or if walking is too painful for you), take other exercise. Swimming is excellent as it uses the muscles of the whole body, including the heart muscle. Some people find it helps to have equipment at home – such as an exercise bike – as they can use it regularly.

It is important to avoid injuring your feet, as this could lead to ulcers. If you do injure your feet in any way, contact your doctor.

Many hospitals now run special exercise classes for people with peripheral arterial disease. An exercise class may also be available in the community. However, you will need to discuss with your GP, specialist nurse or consultant whether the classes available are suitable for you. This is because the exercises need to be tailored to your needs. For more information about physical activity, see our booklet *Physical activity and your heart*.

Control high blood pressure

Increasing the amount of physical activity you do, controlling your weight, cutting salt from your diet and reducing the amount of alcohol you drink can all help to control your blood pressure. If you have high blood pressure (higher than 140/85 mmHg), it is important to take the medicines your doctor has prescribed for this, and to have your blood pressure checked regularly – about every six months.

Many people need to take beta-blockers to help lower their blood pressure. In the past there have been concerns that these drugs might increase leg pain. However, newer types of beta-blockers (called

'cardioselective' beta-blockers) have less effect on the peripheral arteries. So, if you have intermittent claudication and you take beta-blockers and your blood pressure is stable, there is no need to change your medication.

For more information about high blood pressure, see our booklet *Blood pressure*.

Preventing or controlling diabetes

One in five people with peripheral arterial disease has diabetes. So it is important that your doctor does a urine or blood test to check your glucose level.[2]

If you have diabetes, you must keep it well controlled. For more information on diabetes, see our booklet *Diabetes and your heart*.

If you are overweight or obese, lose some weight

If you are overweight or obese, you should try to lose some weight. Being overweight or obese makes walking more difficult. So, if you lose weight, you may find that you can walk further without getting pain. Regular physical activity will help. Ask your doctor or practice nurse for advice on losing weight.

For more information on healthy eating and how to lose weight, see our booklets *Healthy eating for your heart* and *So you want to lose weight ... for good – A guide to losing weight for men and women.*

Watch your cholesterol levels

Having a high level of cholesterol in the blood can lead to atheroma (fatty material) developing within the artery wall. Cut down the total amount of fatty foods you eat, especially the saturated fats. And try to eat at least five portions of fruit and vegetables a day. Some people who have high blood cholesterol levels will need to take a statin medicine. This helps to lower your blood cholesterol levels and helps reduce your risk of coronary heart disease and stroke.

For more information on cholesterol levels, see our booklet *Reducing your blood cholesterol.*

Finally, get to know your feet!

By getting to know your feet you are more likely to notice significant changes. This is particularly important if you have had bypass surgery or angioplasty on your legs. If you notice that one or both of your feet have suddenly got colder or developed a small ulcer, tell your doctor. Choose well-fitting shoes and take care to avoid stones in

your shoes, or nails coming up through the sole. Try to wash your feet each day, and dry them well afterwards. Caring for your feet is especially important if you also have diabetes. If you find it difficult to cut your toenails, you may benefit from the help and advice of a chiropodist. Ask your GP if he or she can refer you to one. Well-fitting, supportive shoes may also help.

If you have peripheral arterial disease, you should aim to manage your risk factors as we have described on pages 13 to 20. You should also do as much physical activity as you can manage, and ideally take part in a physical activity programme.

What can my doctor do to help me?

If your peripheral arterial disease gets worse and causes you a lot of pain, your doctor will refer you to a specialist – probably a vascular surgeon (a surgeon who specialises in treating the blood vessels). When you go for your specialist appointment, the surgeon will examine your legs and check the pulses in your legs and feet. They may check your blood pressure, both in your arm and your ankle. This will give them information about how much blood is reaching your foot. They can take blood tests to check for diabetes and to find out what your cholesterol levels are. They will also discuss with you and assess any risk factors you may have such as high blood pressure or high blood cholesterol levels.

You may also have some special tests to find out where the narrowing or blockage in your artery is, and how severe it is. An ultrasound test called a doppler scan examines the structure of your blood vessels. You may have a scan called a duplex scan which shows both the structure of the artery and the amount of blood flowing through it. You may also have an exercise treadmill test to assess how far you can walk.

Some people may need to have an angiogram. This is an X-ray of your leg arteries. Before taking the X-ray, the doctors will insert a fine, flexible, hollow plastic tube, called a catheter, into an artery in your groin. Dye is then injected through the catheter into the groin. The dye shows up on the X-ray, so doctors can see the blood flow in the arteries of the legs, and where there are any narrowings or blockages. However, you usually only need an angiogram if you have severe symptoms or if you need to have bypass surgery or an angioplasty.

Medicines

You will probably need to take a cholesterol-lowering drug called a statin to help reduce the amount of cholesterol in your blood. You may also need to take aspirin, or another anti-platelet drug, to reduce the risk of a clot (thrombus) forming. Some people may need to take drugs to relieve the pain of intermittent claudication, but many people find that regular physical activity is just as effective as medicines at reducing the pain.

Advice to stop smoking and take exercise

Whatever course of treatment your specialist recommends, he or she will urge you to stop smoking (if you have not already stopped). You will also be given advice about specific exercise programmes, and about diet.

Other treatment options

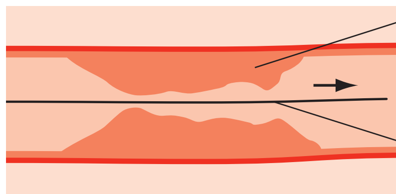
If you have severe narrowing of the arteries, your consultant may talk to you about the possibility of angioplasty or bypass surgery to treat the narrowing or blockage. However, these procedures are not usually carried out on people with intermittent claudication.

Angioplasty

If your quality of life is severely affected, or if you have severe pain or ulcers on your legs or feet, your specialist will probably recommend that you have an angioplasty. Whether angioplasty is the right treatment for you will depend on which part of your leg artery is narrowed or blocked. You can discuss this with your specialist.

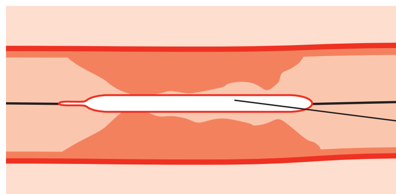
An angioplasty is done under local anaesthetic. A catheter (a fine, hollow tube) is inserted into an artery in your groin and is passed down your leg

Angioplasty

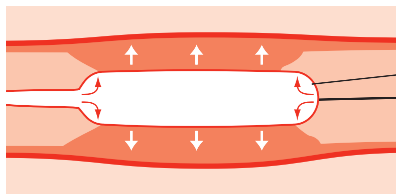


Atheroma (fatty deposits) in the artery wall restricts the flow of blood.

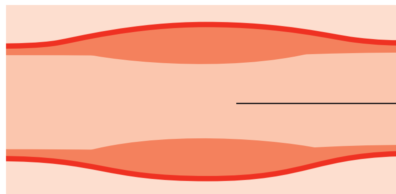
The guide wire of the catheter goes beyond the narrowed part of the artery.



The balloon is positioned in the narrowed area.



The balloon is gently inflated, flattening the atheroma in the artery wall.



The balloon is then let down and removed, leaving the artery open so that the blood can flow through easily.

artery until it reaches the narrowed part. At the tip of the catheter there is a small inflatable balloon. (See the illustration on page 25.) The balloon is gently inflated, squashing the fatty tissue responsible for the narrowing, and so widening the artery. The catheter and balloon are then removed. Sometimes a small wire mesh tube, called a stent, can be used to hold the artery open after the angioplasty. Whether you have a stent or not depends on which part of the artery is narrowed or blocked.

Most people have an angioplasty as a day case (which means that you don't have to stay in hospital overnight), while others may need to stay overnight.

Bypass surgery

If the circulation to your leg is severely affected, the surgeon may discuss with you the possibility of bypassing the blockage. This means grafting a blood vessel to bypass (get around) the narrowed section of the artery. This is a major operation, done under general anaesthetic, and involves a stay in hospital of between 8 and 10 days. The graft used may be an artificial one, or one of your own veins may be used, depending on where the blockage is.

Bypass surgery is only carried out when your consultant has explored all other treatment options and has discussed the risks and benefits of the operation with you.

Success rates of angioplasty and bypass surgery

On the next page we show the relative success rates of angioplasty with stents and bypass surgery. The success rate varies depending on whether the angioplasty or bypass is done in the abdominal or iliac arteries (see the illustration on page 7), or in the arteries in the leg. Overall, the long-term success rate with bypass surgery is better than with angioplasty and stent. However, the advantage of an angioplasty is that it is not a major operation, it has fewer complications than bypass surgery, and it can be repeated if necessary.

Success rates of angioplasty with stent, and bypass surgery

'Success' here means that the problem has been relieved by the angioplasty or surgery and the person is free from symptoms. The percentages below show how many people, out of every 100 who have the procedure, are still free from symptoms after three or five years.[3]

	Success rate after three years	Success rate after five years
Angioplasty with stent		
In the iliac arteries	74%	72%
In the leg arteries above the knee	51%	48%
Bypass surgery		
In the abdominal aorta or iliac arteries	85%	85%
In the leg arteries above the knee	80%	80%

What are the risks linked with peripheral arterial disease?

Coronary heart disease and stroke

Many people with peripheral arterial disease also have some other form of arterial disease such as coronary heart disease (having angina or a heart attack) or stroke. People with diabetes are particularly prone to diseases of the arteries. If you develop chest pain when you exercise, or if you have brief attacks of weakness or numbness down one side of your body, slurred speech, or loss of sight in one eye, visit your doctor straight away. These may be early signs of coronary heart disease or stroke.

Aortic aneurysm

Another possible risk linked with peripheral arterial disease is that a balloon-like swelling, or 'aneurysm', may develop in the aorta (the main blood vessel that leaves your heart). This is called an 'aortic aneurysm'. Your GP or vascular surgeon may examine your abdomen, feeling for one of these swellings, and may send you for an ultrasound scan. If they find an aortic aneurysm, it can be monitored once every 6 to 12 months using an ultrasound scan.

Most aortic aneurysms are small and do not produce many symptoms. If you have an aneurysm, it is particularly important for you to control your blood pressure and cholesterol levels, stop smoking and, if you have diabetes, control your glucose levels. (See pages 13 to 20.)

If the aneurysm gets big, it may cause pain or even burst. If it bursts, this is a medical emergency that needs immediate surgery. You are very unlikely to have a large aneurysm but, if you do, the vascular surgeon will suggest an operation to repair the aorta. This involves inserting a piece of tubing into the aorta at the point where the aneurysm is. The benefits and risks of the operation depend on where the aneurysm is and how big it is. If you do need an operation, your surgeon should discuss the risks with you.

Amputation of the leg

The risk of having a leg amputated (removed) is very small, but is higher if you are a smoker. Amputation is the very last resort. This is only necessary if the circulation to your legs is so poor that you are at high risk of developing gangrene of the leg, and if all other treatments have failed to improve the blood flow.

A final word

If you have peripheral arterial disease, you have a greater risk of having coronary heart disease (angina or a heart attack) or stroke. To reduce this risk, and to relieve the symptoms of peripheral arterial disease such as intermittent claudication, you need to work towards a healthier lifestyle. This means following this advice.

- Stop smoking.
- Eat a healthy, balanced diet.
- Be as physically active as you can.
- Lose weight if you are overweight or obese.
- If you have diabetes, keep your blood glucose levels well controlled.
- Keep your blood pressure and blood cholesterol levels well controlled.
- Remember to take your blood-pressure tablets, aspirin, cholesterol-lowering drugs and any other medicines that your doctors prescribe.

For people with more severe disease, angioplasty or bypass surgery may help.

For more information on all these topics, see the list of booklets on page 33.

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
11 Valvular heart disease
12 Having heart surgery
13 Heart transplantation
14 Palpitation
15 Pacemakers
16 Peripheral arterial disease
17 Medicines for the heart
18 The heart – technical terms explained
19 Implantable cardioverter defibrillators (ICDs)
20 Caring for someone with a heart condition
21 Returning to work with a heart condition
22 Diabetes and your heart

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.

For information on strokes

The Stroke Association
Stroke House
240 City Road
London EC1V 2PR
Helpline: 0845 3033 100
Website: www.stroke.org.uk

Heartstart UK

For information about a free, two-hour course in emergency life support, contact Heartstart UK at the British Heart Foundation (address on the back cover). 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.

References

1 From: 'Cigarette smoking and peripheral arterial occlusive disease', by CW Cole, GB Hill, E Farzard, and others. Published in 1993, in *Surgery;* volume 114, pages 753-756.

2 From: *SHARP Guidelines for Management of Peripheral Arterial Disease.* Published in 2002, by Scottish Heart and Arterial Risk Prevention, Dundee.

3 From: 'Management of Peripheral Arterial Disease (PAD). TransAtlantic Inter-Society Consensus (TASC)', by JA Dormandy and RB Rutherford. Published in 2000, in the *Journal of Vascular Surgery,* volume 31, part 2, pages S1-S296.

About the British Heart Foundation

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.

We rely on donations to continue our vital work. If you would like to make a donation, please ring our **credit card hotline on 0870 606 3399**. Or fill in the form opposite.

We need your help. Please send a donation today.

Please accept my donation of:

£50 ☐ £25 ☐ £15 ☐ £12 ☐ Other £

If you are sending a cheque, please make it payable to **British Heart Foundation**.

Or, you can ring our credit card hotline on **0870 606 3399**.

I want to donate using: ☐ MasterCard ☐ Visa ☐ CAF Card

Card number ***Expiry date***

Signed ***Date***

Name (Mr/Mrs/Miss/Ms/*other*) ____________

Address ____________

____

____________ Postcode ____________

Phone ____________

E-mail ____________

10/2005

☐ Please tick if you would like us to send you a *Gift Aid* form to make your donation work harder at no extra cost to you.

Your personal information

The British Heart Foundation will use your personal information for administration purposes, and to provide you with services, products and any information that you have asked for.

*We greatly value your support and would like to keep you informed about our work through marketing literature to help us meet our charitable aims. We may contact you by phone or post for this purpose. Please tick the box if you would prefer **not** to hear from us in this way.* ☐ *S*

*We may want to share information with other organisations that we work with and who support our aims. Please tick the box if you would prefer us **not** to share your details.* ☐ *MP02*

*Please tick this box if you **would like to** receive e-mail communications about our future activities, at the e-mail address you have provided.* ☐ *MP07*

Thank you for your support.

Please send your donation to: Supporter Services, British Heart Foundation, 14 Fitzharding Street, London W1H 6DH.

Registered Charity Number 225971

Please turn over.

Please send me information about the following.

- ☐ **BHF publications**
- ☐ **Giving regular donations**
  Regular donations through a standing order give us the long-term support we need. Just tick for information on how to set up a standing order.
- ☐ **Remembering us in your Will**
  Many people choose to leave a gift to their favourite charities in their Will. We can send you a useful information pack to tell you how to go about it.
- ☐ **Local fundraising activities and sponsored events**
- ☐ **Payroll giving**
  How you and your work colleagues can donate from your salaries before tax.
- ☐ **Buying BHF Christmas cards and gifts**
- ☐ **Becoming a volunteer in a British Heart Foundation shop**

Please send your form to the British Heart Foundation. The address is over the page.

Technical terms

aneurysm	A balloon-like swelling.
angina	Heaviness or tightness in the centre of the chest which may spread to the arms, neck, jaw, face, back or stomach.
angioplasty	A treatment to improve the blood supply through an artery.
aorta	The body's main blood vessel.
aortic aneurysm	A balloon-like swelling of the aorta.
atheroma	Fatty material that can build up within the walls of the arteries.
atherosclerosis	The build-up of fatty material within the walls of the arteries.
beta-blocker	A drug.
catheter	A fine, hollow tube.
cholesterol	A fatty substance which is involved in the process of atherosclerosis.
claudication	See 'intermittent claudication'.
coronary heart disease	When the walls of the arteries become narrowed by a gradual build-up of fatty material called atheroma.
gangrene	Body tissue that dies, usually due to poor blood supply.
high density lipoprotein	HDL. The 'protective' cholesterol.
intermittent claudication	A cramp-like pain mostly in the calf and leg muscles, brought on by walking and relieved by rest.
PAD	Peripheral arterial disease.
statin	A drug to lower blood cholesterol levels.
thrombus	A blood clot formed in an artery or vein.
vascular surgeon	A surgeon who specialises in treating the blood vessels.

Index

aneurysm ... 29
angina ... 8, 29
angiogram ... 23
angioplasty ... 15, 24, 27
aortic aneurysm ... 29
arteries ... 7
atheroma ... 6
atherosclerosis ... 6
beta-blockers ... 19
blood pressure ... 18
bypass surgery ... 15, 26
cholesterol ... 17, 20
claudication ... 9
conorary heart disease ... 12, 29
diabetes ... 10, 19
diet ... 10
eating ... 10
exercise ... 10, 17
feet ... 12, 20
gangrene ... 9
intermittent claudication ... 9
medicines ... 23
overweight ... 10, 19
physical activity ... 10, 17
scan ... 22
smoking ... 10, 13
specialist ... 22
stent ... 26
stroke ... 8, 12, 29
thrombus ... 6
treatment ... 22
ulcers ... 12, 18, 20

Your comments please

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

British Heart Foundation
FREEPOST WD513
LONDON W1E 1JZ.

1 How did you get this booklet?

I got it directly from the British Heart Foundation. ☐
My GP or practice nurse gave it to me. ☐
I got it from a display at my GP's surgery or health centre. ☐
A nurse or doctor at the hospital gave it to me. ☐
I got it from a display in a hospital. ☐
A friend or relative gave it to me. ☐
Other (Please give details.) ______________________________

2 Do you find this booklet…

very helpful? ☐
helpful? ☐
not very helpful? ☐
not at all helpful? ☐

3 Do you find this booklet …

very easy to understand? ☐
easy to understand? ☐
not very easy to understand? ☐

4 What do you think of the design of the booklet (how it looks, the size of the text, the front cover, the size)?

Very good ☐
Good ☐
Not very good ☐
Poor ☐

Please turn over.

5 Are there any issues that you need to know about that are not covered in this booklet? If so, what are they?

____

____

____

____

____

6 Do you have any other suggestions for how we could improve this booklet?

____

____

____

____

____

7 Are you…

…a patient with a heart condition? ❑

…a carer (for example, a relative or friend of someone with a heart condition)? ❑

Other (Please give details.) ______________________________

Acknowledgements
The British Heart Foundation would like to thank all the GPs, cardiologists and nurses who helped to develop the booklets in the *Heart Information Series*. Thanks also to all the patients who commented on the text and design.

Particular thanks for their work on this booklet are due to:
- Shiela Dugdill, Karen Lody, and Professor Gerard Stansby of the British Vascular Foundation
- Professor Roger Greenhalgh, Professor of Vascular Surgery, Charing Cross Hospital, London
- Phyllida Morris-Vincent, Clinical Nurse Specialist, Royal Free Hospital, London, and
- Mr Kevin Varty, Consultant Vascular Surgeon, Addenbrooke's Hospital, Cambridge.

Edited by Wordworks.

Heart health is a free magazine produced by the British Heart Foundation especially for people with heart conditions. See page 34 for more information.

British Heart Foundation
14 Fitzhardinge Street, London W1H 6DH
Phone: 020 7935 0185
Website: bhf.org.uk

Heart Information Line • 08450 70 80 70

(A local rate number.)

A helpline service for the public and health professionals on issues relating to heart health.

© British Heart Foundation 2005. Registered charity number 225971

Heart Information Series. Number 16 October 2005