Primary angioplasty for a heart attack
About the British Heart Foundation

As the nation’s heart charity, we have been funding cutting-edge research that has made a big difference to people’s lives.

But the landscape of heart disease is changing. More people survive a heart attack than ever before, and that means more people are now living with heart disease and need our help.

Our research is powered by your support. Every pound raised, every minute of your time and every donation to our shops will help make a difference to people’s lives.

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About this booklet

This booklet is for people who have had a heart attack and have had an emergency treatment for it called primary angioplasty. The booklet is also for their family and friends.

Angioplasty is a treatment to re-open a blocked coronary artery. When an angioplasty is used to re-open a coronary artery when someone is having a heart attack, it is called a primary angioplasty.

Primary angioplasty is sometimes called primary PCI, or PPCI for short. PCI stands for percutaneous coronary intervention.

Is this the right booklet for you?
If you had a heart attack but did not have a primary angioplasty as emergency treatment, please read our booklet Heart attack instead of this booklet.

This booklet explains:

- what a heart attack is
- why heart attacks happen
- the tests you will have, to find out if you have had a heart attack
• the treatment you will have if you have had a heart attack
• what happens to your heart after a heart attack
• what you can do in the days and weeks after your heart attack
• what cardiac rehabilitation is, and
• what you can do to reduce your risk of further heart problems.

This booklet does not replace the advice that your doctor, nurse or any other health professional looking after you may give you, but it should help you to understand what they tell you.
What is a heart attack?

When someone has a heart attack, it means there has been damage to a part of their heart muscle. (A heart attack is often called a myocardial infarction.) Before we explain how that damage happens, it helps to know about how the heart works.

How the heart works

Your heart is a muscle that pumps blood around your body, delivering oxygen and other nutrients to all of your cells.

Your heart muscle needs its own supply of oxygen and nutrients so that it can pump blood around your body. The heart muscle gets its blood supply from its coronary arteries, which are on the outside of your heart.

What happens during a heart attack?

A heart attack happens when there is a sudden loss of blood flow to a part of your heart muscle. It usually causes a sudden onset of pain or discomfort in the chest, and it may cause other symptoms which we describe on page 40.
What causes heart attacks?

The cause of a heart attack is nearly always coronary heart disease. This is a condition where the inside of one or more of the coronary arteries becomes narrowed because fatty deposits called atheroma have built up within the artery walls. The fatty area of atheroma in the artery wall is called a plaque.

If a plaque cracks, a blood clot forms to try to repair the damaged artery wall. This blood clot can totally block your coronary artery, causing part of your heart muscle to be starved of blood. If this happens, the affected part of your heart muscle will begin to die, because it is not getting oxygen. This is a heart attack.

During a heart attack there is also the risk of having a cardiac arrest. This is when the heart stops pumping blood and normal breathing stops. We explain more about this on page 12.

Acute coronary syndrome – or ACS for short – is a term that describes any condition caused by a sudden reduction in the flow of blood to the heart muscle, including a heart attack or unstable angina.
What needs to be done if you have a heart attack?

If you have a heart attack, you need to have treatment as soon as possible. This will be to get the blood flowing to the damaged part of the heart muscle again as quickly as possible, and to limit the amount of permanent damage to your heart.

Many people who have a heart attack need to have emergency treatment to unblock the coronary artery.

- **Either** you will have a treatment called primary **angioplasty**, which is a procedure to re-open the blocked coronary artery.
- **Or** you will have **thrombolysis**, which means giving you a ‘clot-busting’ medicine to dissolve the blood clot that is blocking the coronary artery.

For some heart attacks, thrombolysis is not suitable, and certain other medicines are used instead. An angioplasty may also be done after the heart attack rather than as an emergency treatment during the heart attack.

We explain more about primary angioplasty on page 13. **If you had thrombolysis as an emergency treatment for your heart attack**, you will find it more helpful to read our booklet *Heart attack* instead of this booklet.
If you ever think you are having a heart attack, call 999 immediately. Too many people risk their lives by waiting too long to call for an ambulance. If in doubt, call 999. It could save your life.
What happens when the paramedics or other ambulance staff arrive?

A suspected heart attack is treated as an emergency because of the possible damage to your heart, and the risk of death. Early treatment can save your life and can limit the amount of damage to your heart muscle.

The first priorities are to:

- take an ECG to find out whether you could be having a heart attack
- reduce your pain or discomfort
- start treatment to reduce or prevent damage to your heart, and
- resuscitate you if you go into cardiac arrest. (A cardiac arrest can be triggered by a heart attack.)

**ECG**

When the paramedics arrive, they will do a test on you called an ECG (electrocardiogram), to try to find out if your symptoms are due to a heart attack. This has to be done quickly, so as not to delay your transfer to hospital. The test involves putting small sticky patches called ‘electrodes’ on your arms, legs and chest. These are connected, by wires, to an ECG recording machine which records the electrical activity in your heart.
Pain relief

If you have a low level of oxygen in your blood when you’re on your way to the hospital, the paramedics will give you oxygen. To reduce your pain, they may give you morphine intravenously (through a vein), and glyceryl trinitrate (GTN) under your tongue.

Other medicines

The ambulance staff will also give you aspirin, unless they know you are allergic to it or cannot take it for another reason, or you have already taken enough aspirin while waiting for the ambulance. They may also give you another medicine similar to aspirin, such as clopidogrel.

Why did I have a primary angioplasty to treat my heart attack?

Primary angioplasty is the preferred treatment for many people having a heart attack, but only if it can be given very soon after the symptoms start.

The ambulance service works closely with hospitals in their area to try to make sure that people with a suspected heart attack are taken to a hospital that can carry out a primary angioplasty. Sometimes this may be the closest hospital that has a major cardiac centre, rather than your local hospital.
Cardiac arrest

During a heart attack there is a risk of developing heart-rhythm disturbances, including potentially life-threatening ones which can sometimes cause a cardiac arrest. A cardiac arrest is when the heart stops pumping and the person stops breathing normally. If this happens, resuscitation is needed immediately. This is partly why it is so important to call 999 if you ever think you may be having a heart attack.

The paramedics or ambulance staff have a defibrillator with them. If you go into cardiac arrest, one or more electrical shocks from the defibrillator could restore a normal heart rhythm and save your life. For more on cardiac arrest, see page 42.
What happens when I first get to the hospital?

When you get to the hospital, you will be taken straight to the cardiac catheter lab – or cath lab for short. The staff there will prepare you for your primary angioplasty.

What happens during a primary angioplasty?

Before you have the primary angioplasty, you are given a local anaesthetic in either your wrist or your groin. An incision (cut) is then made in your wrist or groin, and a catheter (a fine, flexible, hollow tube), with a small inflatable balloon at its tip, is passed into an artery and up into your heart. During the procedure, some dye is injected into the catheter to make your coronary arteries show up on the X-ray. The doctor will pass the catheter into your coronary arteries, and look at the affected coronary artery to identify the area that is causing the blockage.

The catheter then goes into the coronary artery where the blockage is, until the tip of the catheter lies inside the blocked part of the artery. (See the diagram on the next page.)
The blood clot that is causing the heart attack is nearly always removed from the artery. The balloon is then gently inflated at the point where the blockage is, so that it squashes the atheroma (fatty tissue) that is causing the narrowing, flattening it within the walls of the artery. As a result, this re-opens the artery so that the blood can flow through it more freely to the part of your heart muscle it supplies.

In almost all primary angioplasties, a **stent** is inserted in the widened artery. A stent is a short tube of stainless-steel mesh. The stent is already in position on the balloon when it is inserted into the artery. When the balloon is inflated, the stent expands. When the balloon is deflated, the catheter with the deflated balloon is removed, leaving the expanded stent in place inside the artery to hold the artery open.

For more information on this procedure, see our booklet *Coronary angioplasty*.

**Medicines**

When you are in the cath lab, you may be given several other medicines to prevent dangerous blood clots from forming in the heart during the angioplasty. You may also be given these medicines through a drip during the 24 hours after your angioplasty.
Primary angioplasty with a stent

The balloon and stent are positioned in the blocked area.

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

The balloon is then let down and removed, leaving the stent to keep the artery open.
What other treatment and tests will I need while I’m in hospital?

Medicines
As you have had a heart attack, you will need to start taking medicines every day. If you already had a heart condition before you had your heart attack, you may already be taking some or all of these medicines.

The six main reasons for taking the medicines are to:

- help prevent another heart attack
- help protect your stents (if you have any)
- help reduce the risk factors for coronary heart disease – such as high cholesterol levels or high blood pressure (a risk factor is something that increases your chance of getting a disease)
- prevent or treat the symptoms of angina
- help strengthen the pumping action of your heart, and
- help reduce the risk of heart failure. (This is when the heart muscle is not able to pump blood around the body as well as it used to. See page 23 for more on this.)

You will need to take some medicines from each of these five groups:

- aspirin
• clopidogrel or something similar
• beta-blockers
• either ACE inhibitors or ARBs (angiotensin receptor blockers), and
• statins.

You will need to continue taking these medicines after you leave hospital, and will need to take most of them for the rest of your life. You may also need to take some other medicines, depending on your condition.

For more information on the medicines your doctor prescribes for you, see our booklet *Medicines for your heart*. You may also find it helpful to talk to your doctor or pharmacist about your medicines.

**Tests**

Because you have had a heart attack, you will need to have more tests over the days while you are in hospital.

You will have more **ECGs** to look for any changes in the electrical activity of your heart. You will be attached to a **heart monitor** most of the time for the first day or two, to find out if there are any problems with your heart rhythm. Heart-rhythm problems can sometimes happen as a result of a heart attack.

You may also have some other tests, to look more closely
at your heart and how it is working, and to help decide on the best form of treatment for you. These tests may include the following.

- **Chest X-ray** – A chest X-ray can show if your heart has become enlarged and if there is fluid around your heart. It also shows your lungs.

- **Echocardiogram** – This is an ultrasound picture of your heart which can give accurate information about the pumping action of your heart, and about the structure of your heart and its valves.

- **Exercise ECG** – This is an ECG that is recorded continually, usually while you are walking on a treadmill. An exercise ECG can help decide what level of physical activity you can start doing when you begin cardiac rehabilitation.

- **Stress echocardiogram** – In some cases, if the doctors need more detailed information, a stress echocardiogram may be needed. This is when an echocardiogram is done while the heart is put under stress by increasing its heart rate either with exercise or with a certain type of medicine. Or you may need to have a different type of scan.

We describe all these tests in our booklet *Tests for heart conditions.*
Moving to another hospital, or to another ward or unit

Some people spend all their time in one hospital and then go home. Others have the primary angioplasty in one hospital and then, after a few hours of care, they are transferred to their local hospital.

To start with, you will be cared for on a specialist cardiac unit or ward. When the doctors and nurses are confident that you are making good progress, you may be moved to a different ward with fewer nurses. You will be encouraged to do more for yourself and to move about more.

How long will I need to stay in hospital for?

If you have had a primary angioplasty for a heart attack, you may be able to leave hospital within about two or three days of having the procedure. This depends on your overall condition.

For more information about your treatment

If you want to find out more about the treatment you are having and why you are having it, ask the doctors and nurses who are looking after you.
Before you leave hospital

Before you leave hospital, doctors, nurses, other healthcare professionals, and sometimes a social worker, will assess your care needs and plan your discharge. You should also be referred to a cardiac rehabilitation service (see below).

The staff at the hospital will also give you a discharge letter for you to give to your GP, and a copy of it for you to keep. This letter has details of your diagnosis, the treatment you had while you were in hospital, and the medicines you will need to take. It should also tell you where and when your follow-up appointment is, or how to find out about it.

Cardiac rehabilitation

Also called cardiac rehab.

When you leave hospital after having a heart attack, you should be referred for specialist advice and physical activity to a cardiac rehabilitation service, if there is one available in your area. Everyone’s needs are different and the service you are offered will depend on what has happened to you. Do try and accept a place in cardiac rehabilitation. If you turn it down, you may not be able to get a place later on and may regret it.
Research shows that going to cardiac rehabilitation can reduce the risk of dying after a heart attack and helps improve some of the risk factors for coronary heart disease. Cardiac rehabilitation aims to help you recover and get back to as full a life as possible, as quickly as possible after a heart attack. It also aims to promote your health and keep you well.

For more information, see our booklets *Cardiac rehabilitation* and *What should I expect from cardiac rehabilitation? A guide for heart patients in England.*
The first few days after you leave hospital

It is good to get back home after being in hospital. However, you may feel worried when you leave the safe and monitored environment of the hospital. It is best if you have someone to help you out at home for the first few days or weeks, depending on how well you are recovering. This will help to improve your confidence.

Take things easy for the first few days after you get home following a heart attack. Make sure you have enough rest, but do get up, wash and get dressed. Do some light household activities such as making drinks and light snacks, going up and down stairs a few times a day, and some gentle walking. If any of this makes you feel unwell, contact your GP. Or, if you are already in contact with a cardiac rehabilitation team, you could contact one of the staff there.

Get into a routine for taking your medicines. And follow the instructions on the packet about when to take them. There may be a list of all your medicines in the discharge letter you were given when you left the hospital.

As soon as possible, either you, or a relative or friend, should take your discharge letter to your GP. Your GP will need the information in this letter so that he or she can give you a repeat prescription for your medicines.
What happens to my heart after a heart attack?

A heart attack always causes some permanent damage to the heart muscle, but the sooner treatment is given, the more muscle it is possible to save. Many people still have a good quality of life and health after a heart attack.

If a heart attack damages a significant amount of heart muscle, this can affect the pumping action of the heart. This can lead to heart failure, a condition which can cause symptoms such as breathlessness, tiredness and swollen ankles. For more information on this, see our booklet Living with heart failure.

Also, some people continue to get angina after they have had treatment for their heart attack, because there is still narrowing of one or more of the coronary arteries (coronary heart disease), and angina is a symptom of coronary heart disease. Unfortunately there is no cure for coronary heart disease – only treatments to help relieve its symptoms.

Contact your GP if:
• you have any of the symptoms of heart failure – breathlessness, tiredness or swollen ankles
• you get any new symptoms, or
• your doctors said you probably would not get angina after having your primary angioplasty, but you do get it.
Coming to terms with a heart attack

A heart attack can be a frightening experience, especially if you have, until now, enjoyed good health. While in hospital, many people react with fear and anxiety, possibly made worse by pain and the distress of being surrounded by lots of machines in an unfamiliar environment.

Most of the risk to life happens within the first few hours after the heart attack, which is the time when the heart is vulnerable to serious heart-rhythm problems. (See the information about cardiac arrest on page 12.)

Once you’re back home, it is normal to worry about being left alone, or about what to do if the pain comes back. The people you live with need to strike a balance between ‘wrapping you up in cotton wool’ and allowing you to do more than you are able to. If you feel unsure about what you can do, talk to one of the staff in the cardiac rehabilitation team or your GP. Everyone is different and you should get advice that is relevant to you.

You will probably have good days and bad days. This is quite normal. You may feel low or depressed after returning home. This is a natural reaction to the stress of a major illness and it is quite common. If these feelings
continue, talk to your GP or practice nurse, or to one of the staff in the cardiac rehabilitation team.

Worry and stress can affect your life, making you feel anxious, panicky and depressed.

Anxiety, stress and depression can cause sleep problems such as waking early in the morning and not getting back to sleep. Sleeping problems can also be caused by some medicines. If you feel that anxiety is affecting your quality of life, talk to your GP about it.

Fears and changing emotions are normal after a heart attack. Some people worry about having another heart attack, or about dying. Or they may worry that they won’t be able to do as much as before.

‘Will it happen again?’

Many people wonder if they will have another heart attack. Having one heart attack does increase the risk of having another, but this risk is greatly reduced by appropriate treatment. If you take the medicines your doctors have prescribed for you and follow a healthy lifestyle, you can significantly reduce your risk. Many people find that going to cardiac rehabilitation gives them, and their partner, confidence and support to work out ways of having a healthier lifestyle. For more information on how to have a healthy lifestyle, see page 37.
‘I’m afraid to do too much in case it brings on another heart attack.’

It’s natural to feel a bit concerned about exercising after your heart attack. But your heart is a muscle and, like any other muscle in the body, it needs physical activity to keep it in good condition.

While you are in hospital, the nurses, physiotherapists and doctors will advise you about how much, and what type of, physical activity is suitable for you. At first this will be gentle activity. But you will then gradually do more activity for longer, as you become physically stronger and more confident.

The advice they give you about physical activity may be different to the advice given to other people who have had heart attacks. This is because everyone is different. After you have left hospital, it is important to continue at home with the level of physical activity they have advised you to do.

It is important for you and those around you to be able to talk about your feelings. For more information, see our booklet *Caring for someone with a heart condition*. 
Facing the future

After your heart attack, and during your hospital stay and your recovery at home, you will have the chance to think about your lifestyle. There may be some areas which you will want to change, to reduce the risk of having another heart attack. We explain some of the positive steps you can take on page 37. For many people, life after a heart attack can be better than it was before.
Lesley’s story
A couple of days after her 54th birthday, Lesley suddenly began to feel unwell at work one day. She was found slumped against her desk and a first-aider immediately called an ambulance. Lesley was having a heart attack.

“On the way to hospital I suddenly realised this was serious. We were met at the hospital by a specialist team who took me straight into the cath lab. I had an emergency angioplasty and two stents fitted.

I was extremely frightened, partly because I had no idea what was going to happen. The care I received was excellent and I can’t thank everyone enough for how quickly they acted.

I quickly began to realise just how lucky I’d been. I have changed my lifestyle dramatically – I have quit smoking, eat healthily and have even discovered Zumba classes to help keep me active.”
The first few weeks after a heart attack

Getting active again

Gradually increase the amount of physical activity you do as the weeks go by. Aim to do a little bit more each day, if you can. As the days and weeks pass, you will hopefully be able to see the progress you’re making, and that you can gradually do more and more. Once you have recovered from your heart attack, aim to do some physical activity every day.

Many people find that they get tired easily in the first weeks after a heart attack. This is normal and will usually pass as your strength and confidence return.

Whatever form of exercise you do …

- Gradually build up the amount of activity you do.
- Rest if you feel very tired or breathless, or if you get a chest pain. See your GP if these are new symptoms for you.
- Avoid doing activities after a large meal, or when it is very cold or very hot, or at high altitudes.
- If your doctor has prescribed GTN for you, take it with you when you exercise.

For more information on GTN, see our booklet *Medicines for your heart.*
**Housework**

You can start doing light housework as soon as you feel fit and able – for example, washing up and dusting. After a few weeks, you may feel well enough to do other heavier housework, such as vacuuming.

You can also do light gardening, but avoid digging and heavy lifting in the first few weeks. If in doubt, ask your cardiac rehabilitation nurse, GP or practice nurse for advice.

**Driving**

Your cardiac rehabilitation nurse or cardiac ward nurse will tell you how soon after your heart attack you will be allowed to drive again, and whether you need to tell the DVLA (Driver and Vehicle Licensing Agency) about your heart attack.

How long you must stop driving for will depend on what treatment you had for your heart attack, how stable your condition is, and what type of vehicle licence you hold.

If you do need to tell the DVLA about your heart condition or about a treatment you have had for it, visit www.gov.uk/heart-attacks-and-driving. Or write to them at DVLA, Swansea SA99 1TU.

You may be asked to complete a medical questionnaire and send it to the Drivers Medical Group at the DVLA.
Telling your motor insurance company about your heart condition

Whatever sort of driving licence you have, you need to tell your motor insurance company that you have a heart condition and about any treatment you have had for it. If you don’t, your insurance may not be valid.

Going back to work

If you have a job, you may need to get a medical certificate – or ‘fit note’ – from the hospital or from your GP, to give to your employer. This states if you are unfit to work and when you will be fit to return to work. Usually the hospital gives you a certificate for the time you are in hospital, and the GP gives you one to cover the time after that.

Most people will be able to go back to their previous job about four to six weeks after their heart attack, depending on how well their heart is working, and the type of work they do. Some people may go back earlier than this. If you have a heavy manual job, you may be away from work for at least three months. Or you may decide to change job or take early retirement.

You can talk to your doctor or one of the staff at the cardiac rehabilitation service about when to go back to work.
Going to cardiac rehabilitation (see page 20) can increase the chance of successfully returning to work. For more information, see our booklet *Returning to work with a heart condition*.

**Sex**

People with heart disease and their partners are often understandably anxious about how sex may affect the heart. However, most people can return to having sex after a heart attack. Like any other physical activity, having sex can temporarily increase the heart rate and blood pressure. This increases the work of the heart and, in people with coronary heart disease, may occasionally lead to breathlessness or chest pain. However, sex is just as safe as other equally energetic forms of physical activity or exercise.

Men and women can have a loss of sex drive or sexual dysfunction after a heart attack. Sexual dysfunction is when it is difficult to have sex – for example, a man being unable to get or maintain an erection. This may be the result of the emotional stress you are feeling or the effect of the heart attack on the relationship. Sometimes it can also be the result of taking certain medicines, including beta-blockers, which can affect sex drive, especially in men. Or it may be the result of diabetes or a disease of the circulation. If you are having difficulties, talk to your
GP or the cardiac rehabilitation team about it.

If you use GTN or take nitrates, you should not take PDE-5 inhibitors, such as Viagra.

**Alcohol**

During the weeks after your heart attack, it is best to limit the amount of alcohol you drink. Ask your doctor how much it is OK for you to drink.

The general advice is that men should not regularly drink more than 3 to 4 units of alcohol a day, and women should not regularly drink more than 2 to 3 units a day. (1 unit of alcohol = half a pint of ordinary-strength beer, or a small glass of wine, or a pub measure of spirits.)

**Carers**

Often the partner or person caring for the person who had the heart attack gets very tired and run down. For information for carers, see our booklet *Caring for someone with a heart condition.*
Holidays
Most people prefer to wait until they feel fully recovered from a heart attack before they go on holiday. Others may find that a holiday gives them the chance to relax and unwind and that this helps their recovery.

When you go on holiday, you might want to think about staying in accommodation that is easily accessible. Avoid places at high altitudes or countries that are very hot or very cold. Avoid hilly destinations unless you are fit enough for that level of activity.

Flying
People who have had a heart attack without complications can usually travel by air a few weeks after their heart attack. However, it may be better not to travel unless it is essential, until you feel fully recovered. The best thing is to ask your cardiologist, a nurse in the cardiac rehabilitation team or your GP about when it is OK for you to fly, as the advice will depend on your health and recovery.

If you do fly, you may need to check with the airline whether you need to tell them about your heart condition.

You should give yourself plenty of time at the airport before your flight leaves, to avoid rushing.
Medicines and travel insurance

Pack an adequate supply of your medicines and take an up-to-date list of all your medicines with you, just in case you lose any of them. Also, take with you a written summary of your medical conditions and any allergies you may have. Finally, make sure you have travel insurance. For a list of insurers, see Insurance below.

Insurance

If you have any problem with your insurance policies, the BHF can give you a list of insurance companies that may be useful to heart patients. This list gives details of companies that offer travel, life, health and car insurance. You can get the list directly from the BHF website at bhf.org.uk. Or, to order a copy, call the Heart Helpline on 0300 330 3311 or write to us at the address on the inside front cover.
How can I reduce my risk of further heart problems?

Keeping your heart healthy after your heart attack is vital, as it helps to reduce your risk of heart problems in the future. The following are all very important.

- If you smoke, stop smoking.
- Keep physically active.
- Keep to a healthy weight and body shape.
- Keep your total cholesterol level below 4mmol/l and your blood pressure below 130/80mmHg. It is important to get these checked regularly at your GP’s surgery.
- Eat a healthy balanced diet, including at least five portions of fruit and vegetables a day and two to three portions of oily fish a week – for example, herring, mackerel, pilchards, sardines, salmon or trout. If you don’t want to (or can’t) eat fish, your doctor should prescribe a fish-oil supplement for you after your heart attack.
- If you have diabetes, control your blood glucose level.

For more detailed information about all these things, see our booklet Cardiac rehabilitation, or our other booklets and resources (see page 49).
What to do if you get chest pain

The information below is for people who already have coronary heart disease and who are taking GTN (glyceryl trinitrate) spray or tablets for their angina symptoms.

As you already have coronary heart disease, you may get chest pain or discomfort now and then. Sometimes this will be angina, which you will be able to manage at home with your GTN. However, it could also be a symptom of a heart attack. (We explain more about the symptoms of a heart attack on page 40.)

This is what to do.

1  **Stop** what you are doing.

2  **Sit down** and rest.

3  **Use your GTN spray or tablets.** Take the GTN as your doctor or nurse has told you. The pain should ease after a few minutes. If it doesn’t, take your GTN again.

4  If the pain does not ease within a few minutes of taking the GTN the second time, **call 999 immediately**.

5  If you’re not allergic to aspirin, chew an adult aspirin tablet (300mg) if there is one easily available. If you
don’t have an aspirin next to you, or if you don’t know if you are allergic to aspirin, just stay resting until the ambulance arrives.

If you have symptoms that do not match the ones we have described above, but you think that you are having a heart attack, call 999 immediately.
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.
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.
What is a cardiac arrest?

A **cardiac arrest** is when a person’s heart stops pumping blood round their body and they stop breathing normally.

A person who is having a heart attack may develop a dangerously fast heart rhythm which can cause a cardiac arrest and be fatal.

It is sometimes possible to shock the heart back into a normal heart rhythm by giving **defibrillation**. This means giving the heart an electrical shock using a defibrillator. For every minute that a person is in cardiac arrest before defibrillation, their chances of survival are reduced by about 10%. However, by doing CPR (cardiopulmonary resuscitation) you can double someone’s chance of survival. We explain how to do this on page 45.

Your workplace may have an automated external defibrillator (AED) which can be attached to a person and used to shock the heart back into a normal rhythm if necessary. You should find out where the AEDs are and who is trained in how to use them. The BHF offers a free Heartstart course on CPR (cardiopulmonary resuscitation) and the use of AEDs (see page 51).
What to do if someone has collapsed and is not responding, and may be in cardiac arrest

Think DRS, ABC.

D = Danger

Check for danger. Approach with care, making sure that you, the person and anybody nearby are safe.

R = Response

Check for response. To find out if the person is conscious, gently shake him or her, and shout loudly, ‘Are you all right?’

S = Shout

If there is no response, shout for help.

You will need to assess the person and take suitable action. Now, remember ABC – airway, breathing, CPR.
A = Airway
Open the person’s airway by tilting their head back and lifting their chin.

B = Breathing
Look, listen and feel for signs of normal breathing. Only do this for up to 10 seconds. Don’t confuse gasps with normal breathing. If you’re not sure if their breathing is normal, act as if it is not normal.

C = CPR
If the person is unconscious and is not breathing normally, they are in cardiac arrest.

Call 999 immediately.
• Send someone else to call 999 for an ambulance while you start CPR.
• Or, if you are alone with the person, call 999 before you start CPR.
How to do CPR

If you have not been trained to do CPR, or if you’re not able, or not willing, to give rescue breaths, do **hands-only CPR.** This is described in step 1 on the next page. Keep doing the chest compressions – at a rate of about 100 to 120 times a minute – until:

- the ambulance crew arrives and takes over, or
- the person starts to show signs of regaining consciousness, such as coughing, opening their eyes, speaking, or moving purposefully **and** starts to breathe normally, or
- you become exhausted.
Start CPR

1  Chest compressions

Start chest compressions.

Place the heel of one hand in the centre of the person’s chest. Place the heel of your other hand on top of your first hand and interlock your fingers. Press down firmly and smoothly on the chest 30 times, so that the chest is pressed down between 5 and 6 centimetres each time. Do this at a rate of about 100 to 120 times a minute – that’s about two each second.

2  Rescue breaths

After 30 compressions, open the airway again by tilting the head back and lifting the chin, and give two of your own breaths to the person. These are called rescue breaths.
To do this, pinch the soft parts of the person’s nose closed. Take a normal breath, make a seal around their mouth with your mouth, and then breathe out steadily. The person’s chest should rise and fall with each breath. It should take no more than 5 seconds to give the two rescue breaths.

Then give another 30 chest compressions and then 2 rescue breaths.

3 Continue CPR

Keep doing the 30 chest compressions followed by 2 rescue breaths until:

- the ambulance crew arrives and takes over, or
- the person starts to show signs of regaining consciousness, such as coughing, opening their eyes, speaking, or moving purposefully and starts to breathe normally, or
- you become exhausted.
How your support can help

For over 50 years the British Heart Foundation has pioneered research that’s transformed the lives of people living with heart and circulatory conditions. We’re winning the fight against heart disease as more people are now surviving a heart attack. But this means that more people are living with the disease, so we still have a lot of work to do. A heart attack causes irreversible damage to the heart muscle, which can mean that the heart becomes less efficient at pumping blood around the body. This is heart failure.

At the moment, the heart cannot heal itself. But there is hope, because we believe we can find a cure for heart failure. We’re funding pioneering research into regenerative medicine – finding ways to repair and replace injured heart tissue. Early research has been successful. But with continued support, we hope to use the amazing breakthroughs we’ve seen in the laboratory to help patients.

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.
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 and 02 numbers)
For information and support on anything heart-related.

Genetic Information Service
0300 456 8383 (a similar cost to 01 and 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, or
• 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 catalogue Take heart. 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 **BHF 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.
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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 at bhf.org.uk/contact. Or, write to us at the address on the inside front cover.

Acknowledgements

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

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• Dr Ian Simpson, President of the British Cardiovascular Society, and Consultant Cardiologist, University Hospital Southampton NHS Foundation Trust.
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