

Living with heart failure

Heart Information Series Number 8



British Heart
Foundation

BEATING HEART DISEASE TOGETHER

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About this booklet

This booklet is for people with a **heart failure**, and for their family and friends. It explains:

- what heart failure is
- what causes it
- the symptoms
- how it is diagnosed
- how it is treated, and
- what you can do to have some control over your condition.

We explain the technical terms used in this booklet on page 42.

This booklet does not replace the advice that your doctor, heart-failure nurse or cardiologist (heart specialist) may give you, but it should help you to understand what they tell you.

What is heart failure?

Heart failure is the term used when the heart becomes less efficient at pumping blood round the body, either while you are resting or active. The term 'heart failure' is unfortunate because it implies that the heart has actually failed. However, most people can have some control over their condition by making changes to their lifestyle and by taking their prescribed medication. And for some people, surgery or other types of treatment can help.

How a normal heart works

Circulation of the blood around the body is essential as the blood takes nourishment to all your tissues and organs. It also transports waste materials to the lungs and kidneys, which then get rid of them from the body.

The heart is a muscular pump that pumps blood around your body. The two sides of the heart – the right side and the left side – work together. Blood from your muscles and organs enters the right side of your heart. The heart pumps the blood to the lungs where it takes up oxygen and removes the carbon dioxide it has been carrying. This oxygen-rich blood then enters the left side of the heart. From here it is pumped through the arteries to all parts of your body including to the heart muscle itself.

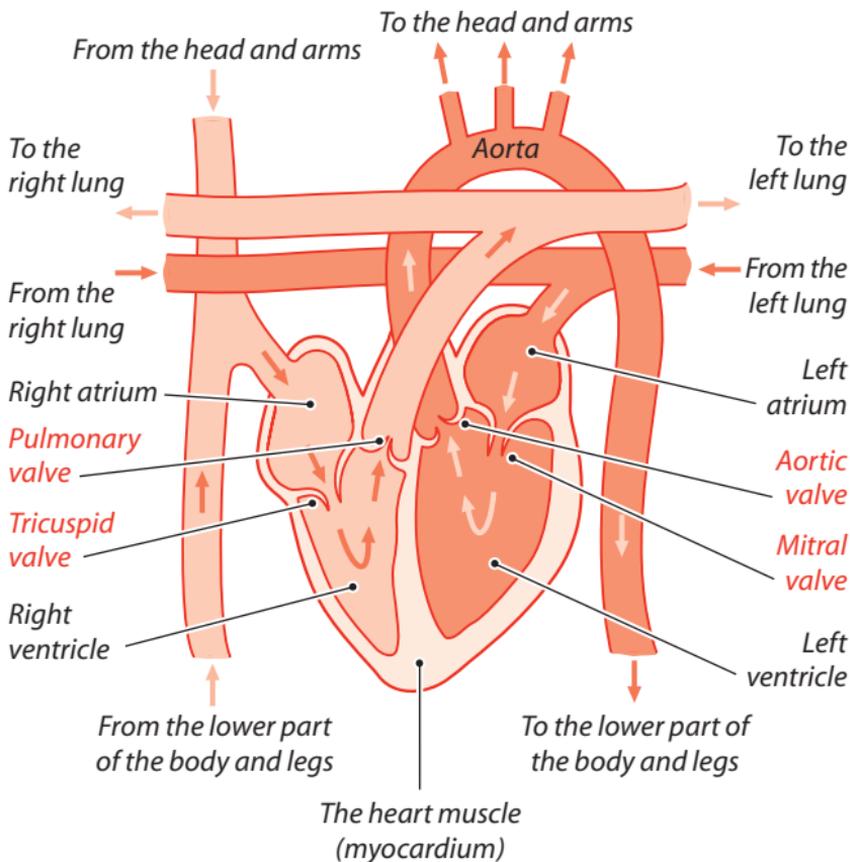
Your heart and how it works

The right side of the heart receives blood from the body and pumps it to the lungs. The blood picks up fresh oxygen and releases carbon dioxide and then goes back to the heart.

The left side of the heart receives the oxygen-rich blood from the lungs, and pumps it out through the aorta to the body.

Right side

Left side



The movement of the blood through the heart is regulated by a system of valves. These make sure that the blood flows in the correct direction. There are four valves – one at the entrance and one at the exit of each of the two pumping chambers.

The illustration on page 6 shows all the parts of the heart including the four chambers and the valves. It also shows the direction the blood flows in. Below we explain what happens in a person with heart failure.

What causes heart failure?

Heart failure may result from damage to the heart muscle. The damage is most commonly caused by a **heart attack**, but sometimes it may be caused by drinking **too much alcohol**, or by a **viral infection**, or by a disease of the heart muscle called **cardiomyopathy**. In some people the cause of the damage is unknown.

Heart failure can also result from conditions which put an extra workload on the heart. The heart may have coped with this increased workload for many years before heart failure occurs. Problems which can cause an increased workload include:

- high blood pressure (hypertension)
- heart valves that either leak or are too narrow
- thyroid gland disease

- a heart rate that is much too fast, or too slow, or irregular, or
- anaemia.

Causes of heart failure of the left side of the heart

The most common causes of heart failure of the left side of the heart are: damage to the muscular pump of the left ventricle caused by a heart attack, prolonged high blood pressure, and diseases of the mitral valve and aortic valve. The main symptoms of left heart failure are **tiredness** and **breathlessness**.

Causes of heart failure of the right side of the heart

The most common cause of heart failure to the right side of the heart is left heart failure (see above). Right heart failure can also be caused by lung diseases, as these can result in the right ventricle not pumping efficiently, causing the heart to become enlarged and producing symptoms of right heart failure. The most common sign of right heart failure is **swollen ankles and feet**. Symptoms include extreme **tiredness** and **breathlessness** following physical activity.

We describe these signs and symptoms in more detail on the next page.

What are the signs and symptoms of heart failure?

The main symptoms of heart failure are **severe tiredness** and **breathlessness**. You may also get **swollen ankles and feet**. These signs and symptoms may come on suddenly, may happen after a heart attack, or may develop slowly over weeks or even months.

Severe tiredness

A common problem with heart failure is loss of energy, and tiredness either while you are resting or after you've done only a small amount of activity. The tiredness can be quite overwhelming, making it difficult or impossible for you to carry on as normal. The tiredness is due, at least in part, to reduced blood flow to the exercising muscles and may be an early symptom of heart failure. How tired and lacking in energy you feel will depend on how severe your heart failure is and how well your symptoms are controlled.

Breathlessness

Breathlessness is a common symptom of heart failure. Failure of the left side of the heart to pump blood into the arteries efficiently enough results in 'back pressure' in the circulation. This can cause fluid to build up in the air spaces of the lungs. The breathlessness is most likely to happen

when you are active or when you are lying flat in bed. You may get a cough, too. Breathlessness may actually wake you up at night, and you may need to sit up, with pillows to support you, or even go to the window for some fresh air.

Swelling of the ankles and feet

People with heart failure often have swelling (oedema) of the ankles and feet. This may extend to their legs, thighs and groin, and there may be swelling of the abdomen too. The swelling is due to the body holding salt and water – something which happens in people with heart failure.

Other symptoms of heart failure

Other symptoms of heart failure may include loss of appetite, feeling sick, constipation, coughing, poor memory, dizziness and a disrupted sleep pattern.

Keeping a record of your symptoms

It may be helpful for you to make a note of your symptoms and talk to your nurse or doctor about how you can best manage them.

Other possible causes of breathlessness and swollen ankles

Breathlessness and ankle swelling are not always caused by heart failure. It is normal to become breathless when you are physically active. Breathlessness is also common in smokers, sometimes as the result of bronchitis or emphysema. People who are obese may get very out of breath when they are physically active and they are also prone to develop swollen ankles even if they don't have heart failure. Also, if you are unfit, you are likely to be more breathless when you are more active.

Varicose veins are another common cause of ankle swelling, especially in women. Ankle swelling may also be a side effect of some medicines. It also sometimes happens in healthy people who have been sitting still for a long time, for example after a long journey.

How is heart failure diagnosed?

If you have the symptoms described on pages 9-10, your doctor may suspect that you have heart failure. In some cases doctors can make a diagnosis after doing a careful physical examination. During a physical examination, your doctor will examine your heart rate and rhythm, take your blood pressure, check whether you have fluid in your lungs, legs and in other parts of your body, listen to sounds made by the heart valves, and check if the blood pressure in your neck is high. (High blood pressure here can be caused by too much fluid.) A blood test will show whether you have anaemia, kidney damage, diabetes or thyroid disease.

You will probably need to have some further tests done. This will include an **electrocardiogram (ECG)** and a **chest X-ray**. However, the most useful and widely used test to check the pumping action of the heart is an **echocardiogram**. This is a type of ultrasound scan. This painless test provides pictures of the heart in action, and allows doctors to check how well the heart is pumping. It often gives important clues about the cause of the condition.

Another useful test to help diagnose heart failure is a **BNP test** (a brain natriuretic peptide test). This is a blood test which measures the levels of certain hormones related to heart failure.

For more details about echocardiograms, ECGs and other tests, see our booklet *Tests for heart conditions*.

What can be done for heart failure?

It may be possible to put right some of the conditions which can lead to heart failure – for example, severe anaemia, or some heart rhythm disorders caused by overactivity of the thyroid gland. Sometimes doctors identify the cause of heart failure as valve disease or a congenital heart abnormality (a heart condition you are born with, and which can sometimes remain undiscovered until adult life). In these cases it may be possible to correct the problem with surgery.

In most patients, heart failure is the result of damage to the heart muscle – damage which reduces the pumping function of the heart. At the moment, there is no cure for this. However, advances in treatment mean that the outlook for many people with heart failure has improved substantially in recent years. We describe the drugs used to treat heart failure on page 20. And on page 25 we describe other forms of treatment that may be suitable for some people with heart failure.

What you can do to help yourself

Symptoms can often be treated effectively – and your outlook improved – by a combination of making changes to your lifestyle and getting the right treatment from your doctors and nurses. It makes good sense to do everything

you can to stop or slow down any progression of your heart failure. This includes the following.

Weigh yourself regularly

If you have heart failure, it is important to keep an eye on your weight. This is because, if your weight goes up, it might be because your body is building up too much fluid. Weigh yourself every morning and tell your doctor or heart-failure nurse about any sudden weight change – for example, if your weight goes up or down by about 6 pounds (about 2.5 kilos) over three days – or if you start getting more breathless, or have more ankle swelling.

Watch the amount of fluid you have each day

Keep a record of your fluid intake and try to have the same amount of fluid every day. If you're not sure how much fluid you should be having, or whether you need to restrict your fluid, talk to your doctor or nurse.

Cut down on salt

Too much salt could increase your blood pressure and could also upset the balance of salt and water in the body. Salt also makes you retain water.

Don't add salt to your food at the table, and avoid cooking with it. You can use herbs and spices to add flavour instead. You may also want to check the

ingredients labels on food packaging. Salt often appears as sodium on food labels. (1 gram of sodium is equivalent to 2.4 grams of salt.) Choose the foods containing less sodium or salt. Aim to have no more than 6 grams of salt a day.¹ Foods that are high in salt include cheese, bacon, canned meat, sausages, crisps, smoked fish and canned soups. Try to avoid processed foods as they can be high in salt. Foods that are low in salt include fruit, vegetables, pasta, rice and potatoes. Don't use salt replacements. You will soon get used to less salty foods.

For more information on salt, see our leaflet *Salt – Facts for a healthy heart*.

Other ways to eat a healthy balanced diet

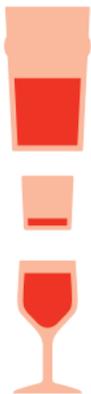
- **Reduce the total amount of fat in your diet**, and eat starchy foods instead – for example, bread, pasta, rice, cereals and potatoes.
- **Cut down on saturated fats** and substitute them with small amounts of polyunsaturates and monounsaturates. Saturated fats are found in butter, cheese, lard, dripping, coconut oil and palm oil. Polyunsaturated fats are found in cornflower oil, sunflower oil, soya oil and fish oil. Some margarines and spreads are made from polyunsaturated fats. Monounsaturated fats are found in olive oil and rapeseed oil, and in some margarines and spreads.

- **Aim to eat at least five portions of fruit and vegetables a day.**²
- **Eat fish twice a week.** One portion a week should be an oily fish – for example herring, salmon, mackerel or sardines.³

For more information on healthy eating, see our booklets *Eating for your heart* and *Reducing your blood cholesterol*, and our leaflet *Guide to food labelling*.

Alcohol

Drinking too much alcohol can sometimes make heart failure worse, so it's best to have no more than 1 or 2 units of alcohol a day.



1 unit of alcohol =

- half a pint (300ml) of beer, bitter, lager or cider (3% to 5% alcohol by volume),
- a pub measure (25ml) of spirits such as gin, vodka, whisky or rum, or
- a small glass (100ml) of wine.

If you're concerned about the amount of alcohol you drink, or about whether you should be drinking alcohol,

talk to your doctor or nurse.

If you have a problem with swelling, watch the amount of fluid you have, especially if you usually drink beer or lager.

Work towards a sensible body weight

If you are overweight, you need to lose some weight. Don't try to lose the extra weight too quickly. Losing weight slowly and steadily (about a pound, or half a kilo, a week) is more healthy, and you're more likely to keep the weight off for good.

For more information on how to lose weight, ask your doctor or nurse about seeing a dietitian. Also, see our booklet *So you want to lose weight ... for good*.

If you smoke, stop smoking

Stopping smoking is the single most important thing a smoker can do to live longer. If you have tried to quit and have gone back to smoking again, there are things that can help. These include products to help you stop smoking, joining a stop-smoking group, or alternative therapies such as hypnotherapy or acupuncture. For more information on these, see our booklet *Smoking and your heart*.

Be physically active, within the limits advised by your doctor

The type of activity that is recommended for the heart is moderate, rhythmic (aerobic) exercise such as brisk walking or cycling. **Walking is particularly good** as you can often build it into your daily routine. If you want to go swimming, ask your doctor or nurse first whether it's the right exercise for you to do.

Try to work some regular activity into your daily routine. But don't overdo the amount of activity you do on one day just because you feel a bit more energetic than usual. Overdoing things will leave you tired and exhausted the following day. So, however energetic you feel, try to keep to the same amount of activity each day.

It is important to keep as active as possible, but build up your activities slowly and do only as much as you feel comfortable doing. If you get very breathless during exercise, you should slow down or stop.

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

Drugs to treat heart failure

Symptoms of heart failure usually respond to drug treatment. Drugs often used by people with heart failure include **diuretics**, **ACE inhibitors**, **digoxin**, **beta-blockers**, **anticoagulants** and **anti-platelet drugs**. We describe these below.

Diuretics

Diuretics (water tablets) increase the amount of water and salt passed from the kidneys into the urine. So they are a great help in relieving any ankle swelling and breathlessness caused by heart failure. There are three main types of diuretic – **thiazide diuretics** (such as bendroflumethiazide), **loop diuretics** (such as furosemide) and **potassium-sparing diuretics** (such as spironolactone).

If you are taking a thiazide or loop diuretic (along with an ACE inhibitor and possibly a beta-blocker), but you still feel breathless and still have too much fluid, your doctor may suggest that you take spironolactone as well.

Thiazide and loop diuretics can cause you to lose potassium, so your doctor will arrange a blood test a few weeks after you start taking them. This is to check the potassium level in your blood. (A very low or very

high potassium level in the blood can lead to dangerous abnormal heart rhythms.) This loss of potassium may need to be balanced out by a second drug.

Strong diuretics act very quickly, which means that you may need to pass water urgently. This can be very inconvenient, so you will need to plan to take the tablets at a time that fits in with your daily activities. You can discuss this with your doctor or nurse. Some diuretics may make you feel sick.

If you think you are getting side effects from these drugs, tell your doctor as he or she may be able to change your dose or give you a different drug instead.

ACE inhibitors

ACE inhibitors have several effects on the circulation, including a relaxing effect on the arteries. This helps the heart as it reduces the work the heart has to do to pump the blood into the circulation.

ACE inhibitors usually lead to a substantial improvement in your quality of life, and improve your outlook. They may also slow down the rate at which your heart's pumping function gets worse.

Your doctor will take care to start the drugs at a low dose, so that you don't have a sudden fall in blood pressure. Before prescribing ACE inhibitors, your doctor will take a

blood test to measure how well your kidneys are working. This test is repeated from time to time once you have started taking the drugs. ACE inhibitors can increase the potassium level in the blood, so if you are taking them, it is important not to take potassium supplements or salt substitutes.

Some patients on ACE inhibitors develop a troublesome cough which may mean that they have to stop taking them. If this happens to you, another drug called an **angiotensin II antagonist** may be a suitable alternative. It works in a similar way to ACE inhibitors but does not give you the cough.

Not all patients with heart failure benefit from taking ACE inhibitors. People with narrowed heart valves or certain forms of cardiomyopathy are less likely to take them.

Digoxin

For many years, the drug digoxin was the main type of drug used to treat heart failure. Digoxin is still very useful for some people who have **atrial fibrillation** – a rapid, irregular heart rhythm which can sometimes lead to heart failure if it is left uncontrolled for a long time. Digoxin is also sometimes prescribed for people with a normal heart rhythm, as it can be a useful treatment for heart failure in certain patients.

Sometimes digoxin can cause the heart to slow down too much so the person might feel very tired, unwell, or become confused. If this happens to you, you should see your doctor. Your doctor or nurse can arrange for you to have a blood test to check whether you have the right level of digoxin in your blood. Depending on the test results, your doctor may decide to change your dose.

Beta-blockers

In the past it was thought that beta-blockers were not suitable for people with heart failure. However, research now suggests that people with heart failure may benefit from taking a beta-blocker, starting with a small dose. It might be a while before you notice the benefits of beta-blockers, because when you first start taking them your symptoms may get worse. The nurse or doctor will monitor your symptoms so that they can increase or reduce the dose of the beta-blocker until they get the correct dose for you.

Anticoagulants

You may need to take anticoagulants if you are at more risk of blood clots. (Blood clots can cause strokes and heart attacks.) This risk may be because you have an artificial heart valve, or because your heart is beating irregularly (atrial fibrillation). Anticoagulants help to prevent clots from forming in the blood vessels and

in the heart itself. The most common type of anticoagulant is **warfarin**.

Anti-platelet drugs

Anti-platelet drugs can reduce the risk of having a heart attack or stroke. They help to stop the blood platelets from sticking together and forming a clot. The most common kind of anti-platelet drug is **aspirin**. Another drug called **clopidogrel** is sometimes used, particularly if aspirin disagrees with you. Aspirin is not usually combined with warfarin (see *Anticoagulants* on page 23), unless you have another associated condition – for example, if you have had a heart attack in the past. If you are taking both and you're not sure why, ask your doctor or heart-failure nurse about this.

For more information on drugs

If you have any questions about the drugs you are taking, ask your pharmacist, doctor or nurse.

Always check with your pharmacist before taking any other drugs, herbal remedies or supplements, as these may interact with your heart-failure drugs.

For more information on drugs, see our booklet *Medicines for the heart*.

Surgery and other treatments

Heart failure cannot always be controlled by medication alone. There are some forms of surgery, and some devices which can be implanted in the body, that can help some people with heart failure. We describe these below.

If the heart failure is caused by **valvular heart disease**, you may be able to have an operation to give you a replacement heart valve. Your heart specialist will carefully assess you to find out whether you are suitable for this type of surgery. For more on this, see our booklet *Valvular heart disease*.

If you have heart failure and you also have **angina** which is poorly controlled, and you are already taking the maximum amount of medicines for your angina, a **coronary angioplasty** or **coronary artery bypass surgery** may be an option for you. For more information on these treatments, see our booklet *Coronary angioplasty and coronary bypass surgery*.

The following are some treatments which may be suitable for some people with heart failure.

- **Using a pacemaker to treat heart failure (cardiac resynchronisation therapy).** Some people may benefit from having a bi-ventricular pacemaker implanted, to help coordinate the contractions of the heart muscle. 'Bi-ventricular' means that the pacemaker has leads that are connected to both ventricles. One lead is connected to the right ventricle and one to the left ventricle. Another lead is connected to the right atrium. (See the diagram on page 6.) For more information, see our booklet *Pacemakers*.
- **Implantable cardioverter defibrillator (ICD).** For those people with heart failure who may be more at risk of life-threatening heart rhythms, a device called an implantable cardioverter defibrillator (ICD) may be implanted. An ICD is similar to a pacemaker, but is usually slightly larger. If you were to suffer from a dangerous heart rhythm, the ICD would help restore a normal heart rhythm. For more information on ICDs, see our booklet *Implantable cardioverter defibrillators (ICDs)*.
- **Inserting a left ventricular assist device (LVAD).** This is a new technique that is currently being evaluated. It may be an option for a small number of people with heart failure. An LVAD is a device to help the failing heart. It acts as a pump to support the circulation. The LVAD may be used for people who are waiting for a transplant, or

for those who have a severe heart infection and who are not eligible for a heart transplant, or generally to give the heart muscle time to rest and recover.

More recently, these devices have been used for people with severe heart failure, who have been refused a heart transplant due to medical reasons. When the device is used in this way, it is called **destination treatment**. This means that the device is used for the rest of the person's life. However, this type of treatment is only used for a limited number of people with end-stage heart failure.

- **Heart transplant.** In a small number of people whose heart failure is very severe and cannot be controlled by medication, a heart transplant may be an option. This is now an extremely successful form of treatment in patients who have been carefully chosen. Unfortunately, it is not suitable for everyone. Also, the number of transplants that can be performed is greatly limited by the number of donor hearts available. (This is why we encourage people to carry a donor card.) For more information, see our booklet *Heart transplantation*.

Heart failure and your quality of life

Symptoms

Tiredness, breathlessness, swelling and fatigue are common symptoms of heart failure, which can make it difficult for some people to live their lives normally. Some people also find that their mood is affected and may feel more anxious and depressed than is usual for them, or lose their confidence. Some have pain. Do tell your doctors and nurses about how you feel, and about the ways that heart failure is affecting your everyday life. They may be able to adjust your treatment to help improve the quality of your life.

Anxiety

Many people with heart failure worry about their condition and the effect it has on their own life and on their families. It is important to discuss this with your family and close friends. You can also discuss with your doctor or nurse any worries or problems related to your heart failure, including the effect it may have on your sex life.

Stress

Stress generally happens when we feel unable to cope when there are high demands on us. It affects different people in different ways. Stress can affect the heart by

releasing certain hormones that can increase blood pressure and encourage the blood to clot in the arteries. Not managing stress can also make us turn to bad habits such as smoking, drinking alcohol, or snacking on unhealthy foods. Finding healthy ways of coping with stress can help you handle your heart failure. For more information, see our booklet *Stress and your heart*.

Lack of control over the future

People with heart failure can become tired and depressed about their limitations, and worried about their future. Understanding what heart failure is and the drugs used to treat it, and being involved in making decisions about your treatment, will all help you to have more control over your condition. Talk to your heart-failure nurse or doctor about your concerns and fears. They will be able to help by explaining what services are offered locally, especially social care services, voluntary services or palliative care.

Health professionals who can help

Some areas of the country now have **heart-failure nurses**. These nurses can see people in hospital and at home, and can give you and your family support, information and guidance. They can also help you to manage your condition on a day-to-day basis. Ask your doctor or specialist if there is a heart-failure nurse available in your area.

They may also refer you to other health professionals who may also help. For example, if you suffer from breathlessness, a **physiotherapist** can help you to feel more in control and to breathe more easily. A **counsellor** may be able to help you cope psychologically with your heart failure. Your **GP** may be able to refer you to one, or it might be possible to get a referral through the hospital. Counselling can be particularly useful for people who feel depressed or are finding it difficult to cope. Your doctor may also be able to prescribe medication to help with depression.

Palliative care

Palliative care is the term used to describe the support and care of patients with severe long-term illnesses. A health-care professional such as your doctor or nurse, or a specialist heart-failure nurse, may provide this. In some cases, your doctor or heart-failure nurse may suggest that you are referred to a specialist or nurse in palliative care, a counsellor or another relevant care provider. The palliative care team focuses on controlling your symptoms. They offer an overall approach to your care which includes the physical, psychological, spiritual and social support for you and your family and helps you achieve the best quality of life possible.

Palliative care is more than just end-of-life care. Most areas of palliative care can also be appropriate early on in the course of your illness, as people can live with a severe illness for a long time. You may want to talk to the team about what care you would like to have in the future including, for example, discussing decisions such as whether, towards the end of your life, you want to be supported at home, and how to get information on different types of wills. Expressing your wishes and talking about your concerns are often a great source of comfort and relief for you and your family. It's good to talk to people who are supportive, knowledgeable and understanding. For information about palliative care services in your area, ask your doctor or nurse or contact the National Council for Palliative Care on 0207 697 1520 or www.ncpc.org.uk.

Support groups

Talking to others can also be very helpful. You may find it helpful to join a **heart support group**. A heart support group gives you, your partner and family the chance to meet and talk to people who have gone through similar experiences. Groups vary. They may meet every week, every fortnight or every month.

The British Heart Foundation keeps an up-to-date list of all heart support groups in England and Wales which are

linked to the British Heart Foundation. To find out about the nearest one to you, call 020 7487 7110 or email: heartsupportgroup@bhf.org.uk

Work and money matters

If you have to stop working because of your heart failure, or if you have other financial worries because of your condition, you can get advice on the benefits that you may be entitled to such as Attendance Allowance. Ask a social worker at your local authority or the hospital social worker, or ask at your local citizens advice bureau.

For more information on managing your heart failure

The heart failure plan is a self-help guide for people with heart failure and for their families and friends.

There is also a DVD called *Heart failure: Your questions answered*. You can order both of these from the British Heart Foundation. See page 38 for details of how to order them.

Caring for someone with heart failure

Caring for someone who has heart failure can be very demanding – both physically and emotionally. If you are caring for someone with heart failure, it is important that you look after your own health and make sure you get regular breaks – for your own wellbeing and for the person you are looking after. Remember that doctors, nurses, social workers, voluntary groups and friends can all help. Ask for help and support whenever you need it.

If you cannot leave the person you are caring for on their own for long, it may be possible to arrange **respite care**. This means that the person is looked after in a care home – for a few days, for example – while you have a break. The heart-failure nurse or social worker may be able to help you arrange this.

An organisation called **Crossroads** may also be able to send someone who can sit with your partner or relative, leaving you free to go out for a break, for example to go shopping. You can call them on 0845 450 0350 to find out what local support is available.

Talking to other carers can be helpful too. Many carers' organisations have local support groups across the country. To find out if there is a carers' support group

near you, contact the **Carer's Line** on 0808 808 7777.
(Carer's Line, 20-25 Glasshouse Yard, London EC1A 4JT.
Website: www.carersonline.org.uk. Email:
info@carersuk.org.) Or you may want to ask your doctor
if he or she can arrange for you to have counselling.
For more information for carers, see our booklet
Caring for someone with a heart condition.

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

Heartstart UK is an initiative co-ordinated by the British Heart Foundation to teach members of the public what to do in a life-threatening emergency – simple skills that can save lives. 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 in a comfortable position.
- 3 Phone 999 for an ambulance.

If the person seems to be unconscious and you think they are having a cardiac arrest

- Approach with care, making sure that you, the person and anybody nearby are safe. 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 **ABC** – **airway, breathing, CPR**.

A Airway

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



B Breathing

Check

Look, listen and feel for signs of normal breathing.
Only do this for up to 10 seconds.

Action: Get help

If the person is unconscious and not breathing normally, phone 999 for an ambulance.



C CPR

Action: Cardiopulmonary resuscitation (CPR)

1 Chest compression

If the person is not breathing normally, start chest compression.

Place the heel of one hand in the centre of their chest. Place the heel of your



other hand on top of your first hand and interlock your fingers. Press down firmly and smoothly 30 times. Do this at a rate of about 100 times a minute – that's a little less than 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 person's nostrils closed using your index finger and thumb and blow into the person's mouth. Make sure that no air can leak out and that the chest rises and falls with each breath.

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 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 coronary heart disease, the BHF and its services.

Booklets

To order any of our booklets:

- call the **BHF Orderline** on **0870 600 6566**, or
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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.

- 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
- 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
- 23 Cardiac rehabilitation

For more information on the treatment of heart failure

Guidelines on the help, treatment and care that people with heart failure can expect from the NHS are due to be published in 2007, by the National Institute for Health and Clinical Excellence (NICE). For up-to-date information, visit the NICE website at www.nice.org.uk. See also the guidelines on the diagnosis and treatment of heart failure produced by SIGN – the Scottish Intercollegiate Guidelines Network – at www.sign.ac.uk. (SIGN is currently updating this publication.)

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 850 5281** or go to **bhf.org.uk/hearthealthmag**.

Emergency life-support skills

Heartstart UK

For information about a free, two-hour course in emergency life-support skills, 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 pumping.

References

- 1 Scientific Advisory Committee on Nutrition. 2003. *Salt and Health*. London: TSO.
- 2 Panagiotakos DB, Pitsavos C, Kokkinos P *et al*. 2003. Consumption of fruits and vegetables in relation to the risk of developing acute coronary syndromes: the CARDIO2000 case-control study. *Nutrition Journal*; 2 (2):1475-2891.
- 3 Scientific Advisory Committee on Nutrition and Committee on Toxicity. 2004. *Advice on Fish Consumption: Benefits and Risks*. London: TSO.

Technical terms

ACE inhibitor	A drug used to treat heart failure.
atrium	A chamber of the upper part of the heart.
bi-ventricular	To do with the two ventricles of the heart.
BNP test	A blood test which measures the levels of certain hormones related to heart failure.
cardiomyopathy	A disease of the heart muscle.
digitalis	See 'digoxin' below.
digoxin	A drug used to treat heart failure and certain abnormalities of heart rhythm. It is made from the foxglove plant digitalis.
diuretic	Also known as 'water tablets'. Diuretics increase the output of water and salt in the urine. They are used to treat heart failure and to lower high blood pressure.
ECG	See 'electrocardiogram'.
echocardiogram	An ultrasound picture of the heart which shows the structure of the heart and how it is working.

electrocardiogram	A test to record the rhythm and electrical activity of the heart. Also called an ECG.
ICD	Implantable cardioverter defibrillator. A device that is implanted in the body. If a dangerous heart rhythm occurs, the ICD will help restore a normal heart rhythm.
left heart failure	Heart failure caused by an inefficient pumping action of the left side of the heart.
LVAD	Left ventricular assist device. A device used to help the failing heart. It acts as a pump to support the circulation.
myocardium	The heart muscle.
oedema	Swelling.
pacemaker	A device that is implanted in the body. It stimulates the heart to contract and produce heartbeats.
right heart failure	Heart failure caused by an inefficient pumping action of the right side of the heart.
ventricle	A chamber of the lower part of the heart.

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Heart Information Line

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



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