

Heart failure

Introduction

An echocardiogram is one of the main methods used to diagnose heart failure

How common is heart failure?

The condition can affect people of all ages, but it is more common in older people (more than half of all people with heart failure are over 75 years of age).

Heart failure is associated with a number of other serious health conditions, including coronary heart disease, heart attack and high blood pressure (hypertension).

Life with heart disease

Tips on living with a long-term condition, including healthcare, medicines and support

Heart failure is a serious condition caused by the heart failing to pump enough blood around the body at the right pressure.

It usually occurs because the heart muscle has become too weak or stiff to work properly.

If you have heart failure it does not mean that your heart is about to stop working. It means that your heart needs some support to do its job, usually in the form of medicines.

Breathlessness, feeling very tired and ankle swelling are the main symptoms of heart failure. However, all of these symptoms can have other causes, only some of which are serious.

The symptoms of heart failure usually develop quickly (acute heart failure), but they can also develop gradually (chronic heart failure).

Types of heart failure

There are three main types of heart failure. They are:

heart failure due to left ventricular systolic dysfunction (LVSD) – due to the part of the heart that pumps blood around your body (the left ventricle) becoming weak

heart failure with preserved ejection fraction (HFPEF) – usually due to the left ventricle become stiff, causing difficulty in filling with blood

heart failure due to valve disease

It is important that the type of heart failure you have is identified because it will affect the type of treatment you will be offered.

A number of tests can be used to help diagnose heart failure.

You should also have blood tests, an electrocardiogram (ECG) and/or an echocardiogram. These are used to investigate your heart and check how well it is functioning. If you have not had these tests, you should ask your doctor for an explanation.

What causes heart failure?

Heart failure does not often have a single cause. A number of problems usually 'gang up' on the heart, causing it to fail.

There are a number of health conditions that increase your chances of developing heart failure including:

high blood pressure (hypertension) – can put extra strain on the heart which over time can lead to heart failure

coronary heart disease (CHD) – where the arteries that supply blood to the heart become clogged up by fatty substances (atherosclerosis); this may cause angina or a heart attack

heart muscle weakness (cardiomyopathy) – can cause heart failure; the reasons for this are often unclear but it may be genetic in origin, due to an infection (usually viral), alcohol misuse, or medication that is used to treat cancer

heart rhythm disturbance (atrial fibrillation)

heart valve disease, damage or problems with the heart's valves

Sometimes, anaemia, an overactive thyroid gland (hyperthyroidism), or high pressure in the lungs (pulmonary hypertension), can also lead to heart failure.

Treating heart failure

In most cases, heart failure is a lifelong condition that cannot be cured. Therefore, treatment aims to find a combination of measures, including lifestyle changes, medicines, devices, or surgery that will improve heart function or help the body get rid of excess water.

In cases where heart failure has a specific cause, a cure may be possible. For example, if your heart valves are damaged, it may be possible to replace them, which can cure heart failure.

As treatment will usually be lifelong, you and your doctor will need to find a balance of effective treatments that you can manage in the long-term so that you have the best symptom control and quality of life possible.

Effective treatment for heart failure can have the following benefits:

- it helps make the heart stronger

- it improves your symptoms

- it reduces the risk of a flare-up

- it allows people with the condition to live longer and fuller lives

Preventing heart failure

Many of the factors that increase your risk of developing heart failure can be managed either by making lifestyle changes or by taking medicines.

For example, in terms of lifestyle factors, you should:

- stop smoking (if you smoke)

- keep your blood pressure at a healthy level

- keep your cholesterol level under control

- maintain a healthy weight (neither too fat nor too thin)

eat healthily, including avoiding excess salt in your diet (severe salt restriction is rarely necessary and is not good for most people); most people should also ensure they have enough iron in their diet (eating red meat or iron supplements can help this)

exercise regularly

limit your alcohol consumption

Living with heart failure

Being diagnosed with heart failure may come as a shock. While the outlook is related to age, the severity of the heart condition, and any other health problems that may exist, such as lung or kidney disease, anaemia and diabetes, it also depends on what you do to reduce your risk.

Self care means taking responsibility for your own health and wellbeing, with support from the people who are involved in your care.

It is very important that you take any prescribed medication, even after you feel better. Some medicines are designed to protect or heal your heart. If you do not take them, they cannot help and the underlying problem will get worse. The medicines can prevent or delay your heart problem and symptoms from getting worse.

Speak to your healthcare team if you have any questions or concerns about the medication you are taking or any side effects.

As heart failure is a long-term condition, you will have regular contact with your healthcare team. Developing a good relationship with the members of your team will enable you to discuss your symptoms and any concerns that you have. The more the team knows about you, the more they can help you.

Symptoms of heart failure

The symptoms of heart failure can vary from person to person. The main symptoms are breathlessness, extreme tiredness, and ankle swelling, which may extend up the legs.

These symptoms may be caused by conditions other than heart failure, and sometimes there may be more than one cause for them.

For example, it is possible for someone to have both emphysema and heart failure, and for both to cause breathlessness. Tiredness and ankle swelling are not usually caused by serious problems.

If you have symptoms such as tiredness and breathlessness, your DOCTOR may suggest that you have some tests to see whether you have heart failure, or to rule it out as a cause of your symptoms.

If you have heart failure, you may also get breathless if you lie flat, or you may wake up in the middle of the night with such severe breathlessness that you have to sit or stand up to catch your breath. If you have severe heart failure, you may need to sleep propped up by several pillows.

Ankle swelling related to heart failure is usually better in the morning and gets worse later in the day, although this is the case for most causes of ankle swelling.

If you have ankle swelling in the morning, it may be useful to raise the foot end of your mattress by 15-30cm (about 6-12 inches) because this will help gravity to drain the fluid back into your body.

Other symptoms that are sometimes associated with heart failure include:

a persistent cough

lack of appetite

weight loss

tachycardia (rapid heart rate)

Some people diagnosed with heart failure may find the diagnosis difficult to cope with and develop depression and anxiety.

Monitoring your health

If you have been diagnosed with heart failure, you should monitor your symptoms closely. Weigh yourself daily (after getting up in the morning, before getting dressed) using a reliable set of scales.

If your weight increases by more than 2kg (4-5lb) over a few days, it may be a sign of fluid retention. This could be an indication that you need to watch the amount of salt in your diet, or check with your care team about whether you need to take some more diuretics (water pills).

You should also inform your DOCTOR or care team if you develop any new symptoms, or if an existing symptom suddenly gets worse.

Causes of heart failure

In most cases, heart failure does not have a single cause.

There are a number of other conditions that increase your chances of developing heart failure. These include:

high blood pressure (hypertension) – can put extra strain on your heart which can lead to heart failure

coronary heart disease (CHD) – where the arteries that supply blood to your heart become clogged up by fatty substances (atherosclerosis); this may cause angina or a heart attack

heart muscle weakness (cardiomyopathy) – can cause heart failure; the reasons are often unclear but it may be genetic in origin, due to infections (usually viral), alcohol misuse, or medication used to treat cancer

heart rhythm disturbance (atrial fibrillation)

anaemia – a lack of red blood cells

an overactive thyroid gland

There are also a number of other conditions that can increase your risk of developing heart failure. Some of these are discussed below.

Heart rhythm abnormalities (arrhythmias)

If your heart beats too fast, it may not have enough time to fill and empty properly. This will cause the heart muscle to weaken.

A very slow heartbeat (less than 40 beats a minute) may reduce the output of your heart, leading to the symptoms of heart failure. However, some people who are very fit can have a pulse of less than 40 beats a minute.

An irregular heart rhythm (atrial fibrillation is the most common irregularity) increases your risk of developing a blood clot (thrombosis), which may cause a stroke. In some people, it may also cause heart failure, particularly if the heart rate is too fast.

Damaged heart valves

The heart contains four one-way valves that ensure the blood flows in the right direction. A leaking valve means that your heart has to work harder and will stretch to deal with the extra volume of blood.

A narrowed valve can obstruct blood flow and reduce the amount of blood that your heart can pump and increase the stress on the heart muscle.

Some children are born with faulty valves (congenital heart disease). Heart valves can also be damaged during a heart attack, or sometimes they can just wear out. The average heart beats about 75 times a minute, which is 4,500 beats an hour or more than 100,000 heart beats a day.

Some damaged heart valves can be repaired but others have to be replaced. This usually requires an open heart operation, although less invasive alternatives are now becoming available and can be used in certain situations.

Myocarditis

Myocarditis is inflammation of the heart muscle. It is usually caused by a viral infection and can sometimes lead to heart failure.

Other congenital heart conditions

Some babies are born with a 'hole in the heart', which is an abnormal connection between the left and right sides of the heart. This allows blood to flow from one side of the heart to the other (usually left to right), putting a strain on the right side and sometimes causing heart failure.

In some cases, a hole in the heart may not be detected until adult life. Holes can often be plugged using devices that are mounted on a heart catheter, though sometimes an operation is required.

Diagnosing heart failure

If you have symptoms of heart failure, your DOCTOR will ask you to describe them in detail, and you will also have a physical examination.

If heart failure is suspected, a number of tests may be recommended to find out more. Some of the tests that you may have include:

blood tests – to check whether there is anything in your blood that might indicate heart failure or some other illness

breathing test – you may be asked to blow into a tube to check whether a lung problem is contributing to breathlessness

an electrocardiogram – which records the electrical activity of your heart

an echocardiogram – where ultrasound waves are used to examine your heart and check how well it is pumping and whether there are valve problems (the procedure is similar to the one used to look inside the womb during pregnancy)

You should ask your doctor whether you should have these tests if you are not offered them but you are receiving treatment for heart failure.

Blood tests

Blood tests can help identify whether another condition is causing your symptoms, such as anaemia, diabetes, thyroid problems, kidney disease, or liver disease. A high blood cholesterol level is often associated with coronary heart disease, which may lead to heart failure.

Natriuretic peptide test

Your blood will be tested for a substance called natriuretic peptide (also called BNP or NTproBNP). If your heart is under high levels of stress, it will secrete BNP into your blood. The test is able to detect these increased levels.

A natriuretic peptide test can also indicate the severity of your heart failure. Higher levels of BNP/NTproBNP in your blood may indicate that you have more severe heart disease, while lower levels may indicate a milder form.

Echocardiogram (echo)

An echocardiogram, or echo, is a procedure that can be used to look at the structure of your heart in detail.

A pulse of harmless, high-frequency sound waves is passed through the chest wall and produces a picture by ‘bouncing back’ from the heart's structures (it is similar to an ultrasound scan used during pregnancy).

During the test, you will be asked to lie on your left side with your left arm behind your head. A gel will be put on your chest and an ultrasound probe (recorder) will be placed at various points on your chest between your ribs.

The probe will pick up echoes from your heart and show them on a screen as a detailed image of the structures of your heart. The image is known as an echocardiogram.

An echocardiogram provides a lot of useful information about the heart, including:

how well your heart valves are working and whether any are damaged

how well your heart is working as a pump (when your heart contracts it forces blood to circulate around your body; this is known as the systolic function)

how well your heart relaxes after pumping (when the heart relaxes after each contraction it fills with blood; this is known as the diastolic function)

whether there are holes in the walls between the chambers of your heart that allow blood to flow from one side to the other (intracardiac shunts)

The most important finding from an echocardiogram is usually a measurement of how well one of the heart's chambers – the left ventricle – is pumping. The left ventricle pumps the blood around the body.

A measurement called the left ventricular ejection fraction (LVEF) is an estimate of how much of the blood that enters the left ventricle is pumped out when the heart muscle contracts.

In a healthy heart, about 60% of the blood entering the left ventricle is pumped out when the heart muscle contracts. A value of less than 40% indicates that your heart is definitely not pumping normally.

Sometimes, different types of echocardiogram are carried out. These are outlined below.

Stress echocardiogram

A stress echocardiogram is carried out to see how well your heart functions when it has to work hard. During the test, your heart rate will be increased, either by exercising on a treadmill or exercise bike, or by using injected medication.

Trans-oesophageal echocardiography

Ultrasound does not travel well through lungs, which can make imaging the heart through the chest wall difficult.

However, the heart lies right in front of the oesophagus (the tube connecting your mouth to your stomach). This makes it possible for a thin, flexible tube with a small ultrasound probe at the end to be inserted into your oesophagus to examine the structures of your heart in much greater detail. There is no lung in the way and the probe can get very close to your heart.

Before the procedure, you may be given a mild sedative to help you relax, and an anaesthetic will be sprayed onto the back of your throat.

Chest X-ray

A chest X-ray may sometimes be used to check whether your heart is bigger than it should be and whether there is fluid in your lungs, which might indicate heart failure. It can also pick up lung conditions that may be causing breathlessness.

Treating heart failure

Importance of treatment

The common symptoms of heart failure, such as breathlessness, swelling (oedema), and fatigue can make it difficult to live a normal life.

Most people have symptoms that can be controlled with medical treatment for long periods of time. Others have severe symptoms that may require surgery or even a heart transplant.

Heart failure is a life-threatening condition and can lead to sudden death, so it is important that you get the right treatment.

Effective treatment for heart failure has the following benefits:

- it can help make the heart stronger

- it should improve symptoms

it reduces the risk of a flare-up or worsening of symptoms
it should allow you to live a longer and fuller life

Finding the right treatments

For most people, heart failure is a life-long condition that cannot be cured.

However, in cases where there is a specific cause of heart failure, such as damaged valves, surgery may be possible to replace the valves. People with an abnormal heart rhythm may be able to have treatment, such as a pacemaker, to correct the problem.

In most cases of heart failure, the aim is to find a combination of treatments involving lifestyle changes, medicines, devices, or surgery that will help the heart pump properly.

Treatment will usually need to continue for the rest of your life. You and your doctor will need to work together to find a balance of effective treatments that you can manage in the long-term so you have the best quality of life possible.

It is important that you tell your doctor if familiar symptoms, such as fatigue or breathlessness, recur or worsen. Your treatment may need changing. Your doctor will review your treatment regularly to ensure it is working properly.

Heart failure increases the risk of developing other dangerous conditions, such as stroke, heart attack, and blood clots in the leg veins and lungs (thrombosis). Treatment for heart failure aims to reduce the risk for all these conditions.

Lifestyle changes

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If you have been diagnosed with heart failure, you can reduce your risk of further episodes by making simple lifestyle changes.

Stopping smoking (if you smoke) will quickly reduce your risk of having a heart attack to near that of a non-smoker.

Other lifestyle changes, such as eating healthily and taking regular exercise, will also improve your symptoms and reduce the pressure on your heart.

Rehabilitation programmes

You may be given an opportunity to attend a heart failure rehabilitation programme. These programmes vary widely throughout the country but most will cover basic areas, including:

exercise

education

relaxation and emotional support

After completing your rehabilitation programme, it is important that you continue to take regular exercise and lead a healthy lifestyle to protect your heart and reduce the risk of further heart-related problems.

Medicines for heart failure

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Most people with heart failure are treated with medicines. Depending on your symptoms, you may need to take several medicines. The usual combination of medicines for people with heart failure and heart failure due to left ventricular systolic dysfunction (LVSD) includes:

a diuretic

an angiotensin-converting enzyme (ACE) inhibitor

a beta-blocker

an aldosterone antagonist

Many patients with heart failure with preserved ejection fraction (HFPEF) will require similar treatment.

Your doctor will discuss the available treatments with you. Most medicines are started at low doses which are gradually increased over a period of weeks or months. Increasing the dose too quickly may cause side effects. Failing to increase the dose to effective levels may result in you not getting the full benefits of treatment.

Ask your doctor if you are not sure whether you are on the best dose for you. The first medicine you try may not work properly or suit you, so changes may be needed until you and your DOCTOR find a combination that works for you.

You may also be offered other medicines if you have another condition or other symptoms that also need treatment.

Diuretics

Diuretics (water pills) make you pass more urine and help relieve ankle swelling and breathlessness caused by heart failure.

There are many different types of diuretic, but some of the most widely used for heart failure are bumetanide and furosemide (also called frusemide). In some mild cases, a diuretic called bendroflumethiazide may be used.

A diuretic called metolazone may be used together with bumetanide or furosemide in people with severe fluid retention.

ACE inhibitors

Angiotensin-converting enzyme (ACE) inhibitors work by dilating your blood vessels (opening them up), which makes the blood flow more easily and reduces blood pressure. This makes it easier for your heart to pump blood around the body.

ACE inhibitors often have a positive impact on the heart's performance, and may improve your quality of life. They reduce the risk of hospitalisation and prolong life.

Examples of ACE inhibitors include ramipril, captopril, enalapril, lisinopril and perindopril.

The most common side effect is a dry, irritating cough. If you have a troublesome cough, an ACE inhibitor may be switched to an ARB (see below).

ACE inhibitors can also cause your blood pressure to fall too low and they may upset kidney function. Your DOCTOR will monitor this.

Beta-blockers

Beta-blockers are usually used to treat people with heart failure due to systolic dysfunction (where the left ventricle that pumps blood around the body doesn't work properly).

They reduce the risk of hospitalisation and prolong life in patients with a low LVEF.

However, beta-blockers may not be suitable for people with asthma, although most patients with chronic obstructive pulmonary disease (COPD) will be able to tolerate them.

Beta-blockers work by slowing your heart down and protecting your heart from the effects of chemicals produced by the body called adrenaline and noradrenaline.

Your doctor may start you on a low dose and increase it over a few weeks or months. There are several different beta-blockers, but the ones used to treat heart failure are bisoprolol, carvedilol and nebivolol.

Ivabradine

As long as the heart is in a normal rhythm (sinus), ivabradine will slow the heart rate. It can be a useful alternative for some people when beta-blockers cannot be used or are not tolerated.

If beta-blockers do not slow the heart enough, the addition of ivabradine can provide added protection leading to improved heart function and symptoms, reduce the risk of hospitalisation and prolong life in people with a low LVEF.

Aldosterone antagonists

Aldosterone antagonists are suitable for some people with heart failure. They work in a similar way to diuretics, but they can stop the diuretics from washing out potassium and may also help reduce scarring of the heart muscle. They improve symptoms, reduce the risk of hospitalisation, and prolong life in people with a low LVEF.

The most widely used aldosterone antagonists are spironolactone and eplerenone. Spironolactone may cause swelling and pain around the nipples in men and testicular atrophy (shrinking of the testicles). Eplerenone rarely causes such effects.

The most serious side effect of these medicines is that they can cause the level of potassium in your blood to go too high, which can cause problems. Your doctor will carry out regular blood tests to monitor your potassium level.

Angiotensin receptor blockers (ARBs)

Angiotensin receptor blockers (ARBs) work in a similar way to ACE inhibitors by widening blood vessels and reducing blood pressure. They tend to be used as an alternative because they do not usually cause a cough.

Examples of ARBs include candesartan, losartan, telmisartan and valsartan. Side effects include low blood pressure (hypotension) and high levels of potassium in your blood. Your doctor will carry out regular blood tests to monitor your potassium level.

Although ARBs do not cause coughs, they may not be quite as effective as ACE inhibitors.

Hydralazine with nitrate

When hydralazine is combined with nitrate, the blood vessels dilate (open up). These medicines are sometimes prescribed by heart specialists for people who are unable to take an ACE inhibitor or ARB.

Digoxin

Digoxin, derived from the foxglove plant, can increase the strength of your heart muscle contractions and slow down your heart rate. It can improve symptoms and reduce hospitalisation, however, it does not appear to prolong life.

It is recommended for people who have symptoms despite treatment with ACE inhibitors, ARBs, beta-blockers and diuretics. It is used earlier in people who have both heart failure and a condition called atrial fibrillation (where the heart beats irregularly).

Anticoagulants

Anticoagulants make it more difficult for your blood to clot, helping to prevent a stroke.

Warfarin is the most commonly used anticoagulant, and requires careful monitoring by your DOCTOR or doctor to make sure you get the right amount.

Antiplatelet medicines

Platelets are cell fragments that are part of the clotting system. Aspirin and clopidogrel reduce the stickiness of blood platelets which may reduce the risk of a heart attack or stroke. Aspirin is not usually taken with warfarin. Speak with your DOCTOR if you are concerned.

Pacemakers

You may need to have a pacemaker fitted if your heart beats too slowly, even if this only occurs occasionally.

A pacemaker monitors your heart rate continuously. If your heart rate drops too low, it sends a signal down a wire to your heart muscle to stimulate it.

There are several different types of pacemaker. The best one for you will depend on the type of heart rhythm or beat problem that you have.

The pacemaker is implanted under the skin by a cardiologist (heart specialist), usually under local anaesthetic. You will usually need to stay in hospital overnight to check that it is working properly. Serious complications from pacemakers are unusual.

Pacemakers need to be checked regularly by specialist technicians at a pacemaker clinic. You will also need to be careful about things that can affect how your pacemaker works, such as hospital equipment and security systems in shops or at airports.

Cardiac re-synchronisation therapy

In some people with heart failure, the walls of the left ventricle (the main pumping chamber) do not work together; they contract out of phase with each other.

Cardiac resynchronisation therapy (CRT) is a special type of pacemaker that can correct the problem, making the walls of the left ventricle all contract at the same time. This makes the heart more efficient.

Most pacemakers only have one or two wires to the heart, but CRT requires an extra wire which is a bit harder to get into place than the other wires.

CRT is considered for people who:

- have moderate to severe heart failure symptoms despite medication

- have a left ventricular ejection fraction (the amount of blood pumped out of the left ventricle) of less than 35%

- have evidence from an electrocardiogram (ECG) that there is a problem with the electrical activation of the left ventricle (a measurement called QRS width); if it is longer than 150 milliseconds (msecs), there is strong evidence of benefit, if it is 120-150 msecs, the evidence is less strong (a normal QRS is less than 100 msecs)

Implantable cardioverter defibrillators (ICDs)

People who have (or are at high risk of having) an abnormal heart rhythm, called ventricular tachycardia (VT) or ventricular fibrillation (VF), may need to have a device known as an implantable cardioverter defibrillator (ICD) fitted.

With VT, the heart beats too fast and there is not enough time for the heart to fill with blood between beats. This can lead to a blackout and may cause VF.

In VF, the heart rhythm is so abnormal that the heart no longer contracts, but 'quivers' instead. This results in death, unless an electrical shock is given to the heart to restart it.

An ICD works by constantly monitoring the heart rhythm. If VT is detected, the ICD will try to correct it. If this does not work, the ICD will try to bring the heart back to normal by giving it a small, controlled electrical shock. If this fails, the ICD will deliver a larger shock. The electrical shocks are known as defibrillation.

If the ICD detects VT, it will defibrillate the heart immediately.

As with pacemakers, ICDs are implanted in hospital, usually under local anaesthetic. Like pacemakers, you will need to avoid things that can interfere with the way the ICD works, such as airport security systems.

CRT-D

Devices that combine cardiac resynchronisation and the ICD function are implanted into patients who need both. Two separate devices are not necessary. These combination devices are usually called CRT-Ds.

Surgery

Medicines are the main treatment for heart failure, but for some people an operation may help.

Heart valve surgery

If the valves of your heart are damaged or diseased, your doctor may suggest valve surgery. There are two types of valve surgery – valve replacement and valve repair.

The type of surgery you have will depend on what is wrong with the valve and how serious the problem is. Your doctor will discuss it with you.

Angioplasty or bypass (revascularisation)

If your heart failure is related to coronary heart disease, your doctor may suggest coronary angioplasty or a coronary artery bypass graft (CABG).

This will help get the blood flowing to your heart muscle and can improve angina, reduce the risk of a heart attack in some cases, and sometimes improve heart muscle function.

Left ventricular assist devices

A great deal of research has been carried out to try to make a mechanical heart that can replace heart function completely. So far attempts have met with limited success.

However, mechanical pumps have been developed to boost, rather than replace, the failing left ventricle and these are quite successful for people with severe heart failure that is difficult to control with medicines. They are complex and expensive and are not suitable for everyone. They are usually only implanted in a heart transplant centre.

Mechanical booster pumps require an external battery, so a wire has to be tunnelled underneath the skin. The wire can cause an infection, which is a major drawback of this type of technology. In the UK, several hundred people are living at home with fairly active lives after having one of these pumps fitted.

Heart transplantation

In recent years, the survival rates and quality of life among people with severe heart failure has improved substantially.

However, some people have such severe heart failure that treatment with medicines or surgery does not help, and they may need to have their diseased heart replaced with a healthy one from a donor.

Having a heart transplant is a major decision. It is a complex surgical operation with risks. There is also a shortage of hearts for transplantation and some people have to wait years for a suitable heart closely matching their own.

Preventing heart failure

Many of the factors that increase your risk of developing heart failure can be managed either by making lifestyle changes or by taking medicines.

In particular, high blood pressure (hypertension) and smoking are risks for heart health, and tackling them could help reduce symptoms and improve quality of life.

Stop smoking

Giving up smoking (if you smoke) is likely to be the single biggest way to cut your risk of developing coronary heart disease and heart failure. Tobacco smoke can damage your heart in a number of ways, forcing it to work harder.

Smoking also tends to make the blood thicker and slows down blood flow, increasing the risk of blood clots (thrombosis). It damages the linings of the arteries, causing them to furr up. This furring up of the arteries (atherosclerosis) is a main cause of coronary heart disease, stroke and some forms of dementia.

Research has shown that you are up to four times more likely to give up smoking successfully if you use professional support, together with stop-smoking medicines.

Reduce your blood pressure

If your blood pressure is too high, your heart has to work harder to pump blood around your body. To cope with the extra effort, the heart muscle thickens over time, and will eventually become too stiff or weak to work properly.

Keeping your blood pressure at a healthy level can stop or delay this happening so it may be useful to have your blood pressure checked regularly.

It may be necessary to take blood pressure medicines (usually more than one) to get your blood pressure down to a healthy level. It is important you and your doctor choose the medicine or combination of medicines that will suit you.

Reduce your cholesterol level

High levels of cholesterol (fat) in your blood can cause furring and narrowing of the arteries (atherosclerosis), heart attacks and strokes.

The risk of coronary heart disease – and therefore heart failure – increases as the level of cholesterol in your blood increases. If you have other risk factors, such as high blood pressure or you smoke, the risk is even higher.

If your cholesterol level is too high, your doctor will usually first advise you to make some changes to your diet (switching to a low-fat diet) and to take plenty of regular exercise.

If, after a few months, your cholesterol level has not decreased, you will usually need to take cholesterol-lowering medicines called statins.

Lose weight

If you are overweight, added pressure will be placed on your heart, increasing your risk of coronary heart disease and heart attack. Both of these make heart failure more likely.

Following the advice below will help you lose weight, as well as lowering your risk of developing heart failure.

Eat a healthy diet

A healthy diet can help reduce your risk of developing coronary heart disease and therefore heart failure.

If you already have heart problems, eating healthily can help protect your heart from getting worse, as well as protecting you from other diseases, such as diabetes and some types of cancer.

Keep active

Regular physical activity can keep your heart healthy and help you maintain a healthy weight.

You do not need to join a gym or start running marathons, but including exercise in your daily routine will help. If you do not have a good level of mobility, you may be able to do arm or wheelchair-based exercises.

Drink within safe limits

Drinking more than the recommended amount of alcohol can increase your blood pressure, which can lead to heart failure.

Heavy drinking over a number of years can damage your heart muscle and lead directly to heart failure, as well as having many other harmful effects on your health.

Men who regularly drink more than three to four units of alcohol a day, and women who regularly drink more than two to three units a day are likely to be damaging their health.

Read more about cutting down your alcohol consumption.

Cut your salt intake

Too much salt can raise your blood pressure, so reducing the amount you eat will help keep your blood pressure down and reduce your risk of developing heart failure.

People of African-Caribbean descent appear to be more at risk of the harmful effects of salt compared with people from other ethnic groups.

However, it is rarely helpful or necessary to have a diet that is very low in salt. Avoiding adding salt to food at the table or during cooking and not eating too much obvious salty foods, such as curry, salted snacks and pizza, is a good start.

Living with heart failure

Being diagnosed with heart failure may come as a shock.

Although the outlook is related to age, the severity of the heart condition, and any other health problems that may exist, such as lung or kidney disease, anaemia and diabetes, it also depends on what you do to reduce your risk.

Self care

Self care means taking responsibility for your own health and wellbeing, with support from the people involved in your care.

Taking your medication

It is very important that you take any prescribed medication, even if you begin to feel better. Some medicines are designed to protect or heal your heart. If you do not take them, they cannot help. The medicines can prevent or delay your symptoms getting worse.

It is also useful to read the information leaflet that comes with the medication about possible interactions with other medicines or supplements. Check with your healthcare team if you plan to take any over-the-counter remedies, such as painkillers or any nutritional supplements. This is because they can sometimes interfere with your medication.

You should also speak to your healthcare team if you have any concerns about the medication you are taking, or if you are experiencing any side effects.

Flu vaccination

Everyone with heart failure is encouraged to get a yearly flu jab each autumn to protect against flu (influenza). It is also recommended that they have a pneumococcal vaccination, a one-off injection that protects against a serious chest infection called pneumococcal pneumonia.

Diet and exercise

A healthy diet and regular physical activity can help improve your symptoms and help prevent other conditions, including some forms of cancer.

Try to eat a healthy, balanced diet containing all the food groups to give your body the nutrition it needs. Exercising regularly can help relieve stress and reduce fatigue.

Not smoking

Giving up smoking (if you smoke) can improve your overall health, prevent further damage to your lungs and reduce the risk of serious conditions such as cancer.

Regular reviews

As heart failure is a long-term condition, you will have regular contact with your healthcare team. Developing a good relationship with the members of your team will enable you to discuss your symptoms and any concerns that you have. The more the team knows about you, the more they can help you.

You should know what basic tests should be done, how often they should be repeated, what medicines you should take and what their target doses are. If you do not know, you should ask.

Cardiac rehabilitation

Taking regular exercise will improve the overall health of your heart. However, an exercise programme that is led by a health professional can help people with heart failure to breathe more easily and improve their quality of life.

If these programmes are available in your area, they are likely to be part of a service called cardiac rehabilitation.

Most people on cardiac rehabilitation programmes will either have had heart surgery or a heart attack, but the programmes are also useful for people with heart failure.

They are usually run in hospitals by cardiac rehabilitation teams, which include various healthcare professionals, such as nurses, physiotherapists, occupational therapists and exercise specialists.

The exercise programmes vary widely across the country, but most cover one or more of the following:

exercise

education

relaxation and emotional support

Before you start, you will have an assessment to find out how much exercise you can safely do. The programme worker will tailor a programme of exercises specifically for you. You will be encouraged to start slowly and gently and to gradually increase the amount of exercise you do over the week. You should work within your limits and follow the advice you are given.

The sessions will begin with warm-up exercises. The main part of the session will be aerobic exercises that help your heart and circulation. Some programmes use special equipment, such as exercise bikes, and others will include exercises you can do in a chair.

You may be asked to monitor your heart rate while you exercise by using a small machine called a heart rate monitor that you can hold or strap to your wrist. This is to ensure your heart does not work too hard.

At the end of each session, there will be a cool-down phase that will involve stretching your muscles to help stop them aching the next day.

The education part of the programme will give you information on healthy eating, recognising and avoiding stress, and practical ways to reduce your risk of further damage to your heart. Many programmes also focus on different ways to relax and finding a technique that suits you.

The British Heart Foundation website has a postcode search facility that you can use to find a cardiac rehabilitation programme in your area. You can also read more about recovering from a heart condition.

Feelings and relationships

Being diagnosed with heart failure can be a shock. Some people feel scared, anxious, depressed or angry. They may feel unable to enjoy the things they used to, or to cope with everyday life. It is estimated that around one in five people with heart failure have depression.

You should seek help if you think that you are depressed. Not only does depression reduce your ability to enjoy life, but it can make your heart failure symptoms worse.

Understandably, heart failure can make you worry about your health and how it affects your family. Many people also find that their physical relationship with their partner changes after they have been diagnosed, due to worries about having a heart attack, or losing interest in sex, or being unable to get an erection (which can sometimes be caused by your medication).

It is important that you discuss any worries or problems you have with your doctor or nurse if you feel unable to talk to your family. Many people do not want to burden those closest to them with their worries.

Your doctor or nurse will be able to advise you and arrange support. You may also find it helpful to join a heart support group where you can talk to other people with heart conditions whose circumstances are similar to yours.

Travelling

Being diagnosed with heart failure should not prevent you from travelling or going on holiday, as long as you feel well enough and your condition is well controlled. If you have heart failure, check with your doctor before you travel.

Ensure that you inform the airline, who may provide a wheelchair or electric car so that you can avoid having to walk long distances in the airport.

Anyone travelling and sitting still for a long time, either in a car, coach or on a plane, should do simple exercises to reduce the risk of deep vein thrombosis (DVT). When flying, you should wear flight socks or compression stockings to keep blood flowing through your legs and reduce the risk of DVT.

You should also be aware that your legs and ankles may swell when flying and breathing may become more difficult if you have severe heart failure.

It may be a good idea to take two sets of medication with you when you travel. Carry them in different places in case you lose one, and make a list of the medication you take and what it is for.

Having heart failure should not stop you from getting travel insurance, but you may have to find a specialist company that will insure you.

You can read more about holidays and travel on the British Heart Foundation's website.

Caring for someone with heart failure

Looking after someone with heart failure can mean anything from helping with visits to their DOCTOR or hospital clinic to collecting prescriptions or full-time caring for someone with more severe heart failure.

There are many ways you can support someone with heart failure. Heart failure can be disabling and distressing, and many people with the condition find it a huge relief to share their concerns and fears with someone who cares.

As a carer, if you can attend DOCTOR and hospital appointments with the person with heart failure, you can encourage them to ask the right questions while you note down the answers. You could also provide the doctor with additional information or insights into the person's condition, which can be helpful for planning the right treatment.

Another way that you can help is by watching for warning signs that the person's heart failure is getting worse, or if they are not responding to treatment. Contact the person's doctor if you notice a new symptom, or if their current symptoms are getting worse.

Signs to look out for include:

shortness of breath that is not related to usual exercise or activity

increased swelling of the legs or ankles

weight gain of more than 1.8-2.3kg (4-5lb) over a few days

swelling or pain in the abdomen (tummy)

trouble sleeping, or waking up short of breath

a dry, hacking cough

increasing tiredness, or feeling tired all the time

What will happen towards the end?

When heart failure gets more severe, a person may become more and more immobile.

Breathlessness can get worse and can become distressing. Increased intensity of treatment, sometimes including morphine (opioids), may be required to control breathlessness.

Some people also find that grumbling, low-level aches and pains become more of a problem as their heart failure gets worse. Opioids can also help relieve pain.

What is palliative care?

Palliative care is the support and care of a person's symptoms when there is no cure for their condition. Your doctor or nurse may suggest that you see a specialist or nurse in palliative care or a counsellor.

A palliative care team will focus on controlling your symptoms, keeping you as comfortable and as pain-free as possible, as well as offering physical, psychological, spiritual and social support for both you and your family.

What decisions do I need to make?

The things that you will need to consider are listed below.

Making a will if you have not made one already.

An advance statement lets those close to you know about the type of care you would like and where you want it – for example, at home, at hospital, or in a hospice – if you are not able to decide for yourself. While you can write down your wishes about what sort of future treatment you do and do not want, doctors can override your decision if they think it is in your best interests.

Whether you want to make a living will (this is called an advance decision). This allows mentally competent people to refuse some or all forms of medical care in the future when they are unable to make their own decisions or tell doctors what they want (for example, if they are in a coma). This is legally binding, so doctors must comply with your wishes.

Whether you want to be resuscitated if your heart stops.

Whether you would want your defibrillator turned off (if you have one).