

About Heart Failure

An introduction to heart failure

- Heart failure is when the heart is not pumping enough blood around the body to meet its needs.
- This causes a range of symptoms such as tiredness and breathlessness.
- There are many different causes of heart failure, only one of which is cardiomyopathy.
- Treatment aims to control and reduce any symptoms.

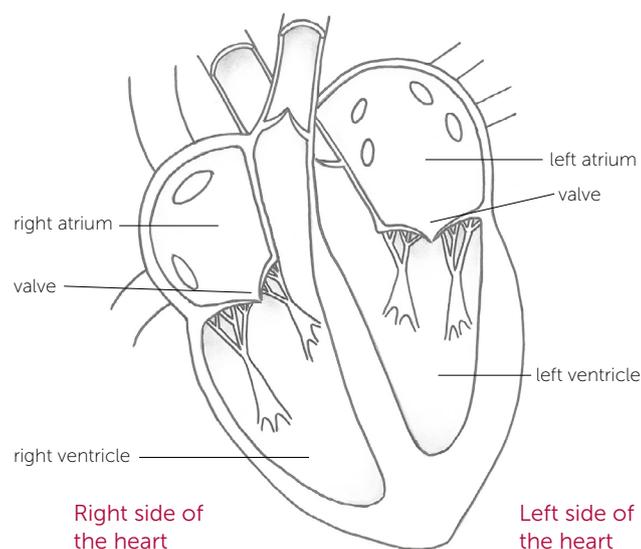
What is heart failure?

The heart's role is to pump blood around the body, so that oxygen and nutrients get to all the muscles and organs, to 'power' them. When the heart doesn't pump sufficiently, it is unable to pump as efficiently as it should. This means that less blood, at lower pressure, moves around the body and the muscles and organs don't get enough oxygen to work effectively.

Heart failure is a clinical syndrome that consists of symptoms such as breathlessness, ankle swelling, and fatigue. These symptoms may be accompanied by signs such as elevated jugular venous pressure, pulmonary crackles, and peripheral oedema. It is caused by an abnormality in the structure and/or function of the heart that results in elevated intracardiac pressures and/or inadequate cardiac output at rest and/or during exercise.

Although the term can sound daunting, it does not mean that the heart is not working at all, it means that the heart is not pumping sufficiently, and needs support in order to meet the demands of the body.

For more about the role of the heart see our factsheet 'About the heart'.



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Who gets heart failure?

Heart failure can happen at any age, although it tends to happen more often in older people than younger people, as it can be caused by conditions that may be more common in older people.

What causes heart failure?

Heart failure is not a diagnosis, but a term describing the reduced function of the heart caused by a condition or injury to the heart. Heart failure can have many different causes, and sometimes a combination of causes. The impact of heart failure can vary depending on the cause, and the cause can also determine what treatment is used. The following are some possible causes.

Coronary artery disease – the arteries that provide the heart's own supply of blood get blocked with a fatty substance (plaque). This reduces the blood supply to the heart muscle. If it blocks it completely this can cause a Heart attack which damages the heart muscle.

Heart valve problems – the valves of the heart are damaged and do not work properly. The role of the valves is to ensure that blood flows in the right direction through the heart. If they are not working properly, this can affect blood flow through the heart and reduce the amount of blood leaving the heart.

Heart rhythm disturbances – the heart beats too fast, too slow or erratically, which affects how well the heart pumps.

High blood pressure – this puts a strain on the heart as it has to work harder to pump blood around the body. This can make the heart stiff and weak.

Pulmonary hypertension – blood pressure in the vessels that go from the heart to the lungs is raised, which can damage the right side of the heart, making it work less well.

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Congenital heart disease – these are problems with the heart that are caused during development in an unborn baby.

Inflammation of the heart muscle (myocarditis) – caused by viral infections that spread to the heart and damage the heart muscle.

Heart failure and cardiomyopathy

Cardiomyopathy can cause heart failure. This doesn't always happen, but can be caused by any type of cardiomyopathy. Medication treatment for cardiomyopathy, such as ACE inhibitors, can help slow down the onset or development of heart failure.

What are the symptoms of heart failure? Sometimes symptoms may come on slowly over time (called chronic heart failure) or they can develop quickly (called acute heart failure).

The most common symptoms of heart failure include the following.

- **Breathlessness** – fluid builds-up on the lungs, making it harder to breathe. To start with, this might happen just when doing activities, but in more severe cases it can happen even when resting. It might be worse when lying down or at night, and can affect how well someone sleeps
- **Tiredness** – as the heart's function is reduced, less energy is delivered to the tissues, which causes tiredness. This might happen all the time, and so doing any activities can be exhausting.
- **Swollen ankles and tummy** – build up of fluid in the tissues, because the heart isn't pumping effectively to remove excess fluid, can cause swelling (oedema).

Some people have other symptoms, which can include the following.

- **Palpitations (feeling your heart beating too fast, too hard or like it is 'fluttering')** – this is caused by abnormal heart rhythms ('arrhythmias') where the heart is beating too fast or erratically because the electrical messages which control the heart's rhythm are disrupted.
- **Dizziness or fainting** – caused by reduced oxygen levels or blood flow to the brain, this can cause light-headedness or dizziness and, in some cases, loss of consciousness or fainting.
- **Persistent cough** – caused by the build-up of fluid (oedema) in the lungs, this can make it harder to breathe and cause a cough.
- **Weight gain** – heart failure causes fluid retention which may cause a sharp increase in weight.

There are tools available to help you monitor your symptoms.

- Cardiomyopathy UK – we have a diary to help you monitor your symptoms if you have cardiomyopathy, available from www.cardiomyopathy.org
- Heart Failure Matters produces a 'monitoring your heart failure – signs chart' available from www.heartfailurematters.org
- Pumping Marvellous produces a 'My marvellous symptom checker' available from www.pumpingmarvellous.org

How is heart failure diagnosed?

If you may have heart failure, there are several tests that might be done to diagnose it. These will usually be done by a cardiologist in the local hospital.

Blood tests – are used to see if there are any other causes for your symptoms.

BNP (brain natriuretic peptide) test – BNP is a hormone made by the heart, and can be measured to see how well the heart is working. Increased levels show that the heart is having to work harder.

Echo (echocardiogram) – this is a type of ultrasound scan, which uses sound waves to create echos when they hit different parts of the body. This test looks at the structure of the heart and how it is working.

MRI (magnetic resonance imaging) scan – this scan produces high quality images and is used to look at the structure of the heart and blood flow through it.

Other cardiac investigations include:

ECG (electrocardiogram) – this looks at the electrical activity of the heart and whether arrhythmias (abnormal heart rhythms) are happening. An ECG might be done during exercise.

Chest X-ray – this looks at the size and structure of the heart, and whether you have fluid on the lungs (a symptom of heart failure).

Coronary angiogram and cardiac catheterisation both involve having a long tube (catheter) fed into the heart and coronary arteries. In an angiogram, a dye is injected and X-rays are done to see if there are any blockages in the arteries, for example, due to coronary heart disease. In catheterisation, the pressure in the heart chambers, and blood flow through the heart, are measured.



Classes of heart failure

If you are diagnosed with heart failure, you may be given a classification of how severe it is. This is often the 'New York Heart Association classification of heart failure' (NYHA), which groups people into classes according to the impact of their heart failure.

- Class I (unaffected): activities are unlimited, and ordinary activity doesn't cause symptoms.
- Class II (mildly affected): activity is limited a little. Activities such as walking up several flights of stairs causes symptoms such as tiredness, palpitations and breathlessness.
- Class III (moderately affected): activity is more limited than class II. Symptoms happen with activities such as walking on a flat surface.
- Class IV (severely affected): activity is very limited. Symptoms happen with all activity, and the person is breathless even when resting.

Knowing which class you are in might help your doctors decide the right treatment options for you.

For more information on classes of heart failure visit www.heart.org and search 'heart failure classification'.

How is heart failure treated?

Medication

Diuretics (water tablets) – help to reduce water retention (which causes swelling in the ankles and around the lungs) by encouraging the kidneys to produce more urine. They may not be needed once the ACE inhibitors and beta blockers begin to work.

SGLT2 inhibitors – empagliflozin and dapagliflozin work by preventing the kidneys from reabsorbing glucose back into the blood.

ACE inhibitors (angiotensin-converting enzyme inhibitors) – relax and open up blood vessels, which makes pumping blood easier and takes strain off the heart. They can control blood pressure, and control and prevent worsening of heart failure symptoms.

Beta blockers – slow down the heart rate, and control arrhythmias.

ARBs (angiotensin II receptor blockers) – similar to ACE inhibitors, these relax the blood vessels and lower blood pressure. They are sometimes used if ACE inhibitors are not suitable due to side effects.

Aldosterone antagonists – these are a type of diuretic and may be used for longer-term treatment.

Ivabradine – helps to slow down the heart, and may be used for people unable to take beta blockers.

Digoxin – helps to slow down the heart rate while making the heart contract more strongly. This may be used when ACE inhibitors, ARBs, beta blockers and diuretics don't work effectively.

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Sacubitril and valsartan (brand name Entresto) – contains the ARB valsartan and an anti-hypertensive drug called sacubitril. It is a relatively new medication and may be used in severe heart failure, where a combination of ACE inhibitors and beta blockers are not effective (see page 4).

Devices

Where medication doesn't control all the symptoms, devices might be used alongside them. Devices help to monitor and control the heart's rhythm, or help electrical messages pass through the heart. They include the following.

Pacemaker – these send electrical impulses to the heart to stimulate the contraction of the heart muscle, and set a normal heart rhythm (if the heart is unable to set its own pace, or the heart rhythm is disrupted). Some work continuously to set the electrical rhythm of the heart and others also have an ICD function.

CRT (cardiac resynchronisation therapy devices, also called a biventricular pacemaker) – this type of pacemaker helps to resynchronise (coordinate) the electrical messages between the two ventricles of the heart and improve how well the heart pumps. Some also have an ICD function (called CRT-Ds).

ICD (implantable cardioverter defibrillator) – these monitor the heart's rhythm and give an electric shock to the heart if a life-threatening arrhythmia is detected. Some also have a pacemaker function.

The symptoms of heart failure can be treated to minimise their impact. What treatment is used depends on the cause and the symptoms that are experienced. Treatment can take many different forms, and may include some of the following.

Guidelines on how to treat heart failure have been developed. See end of this factsheet for more details.

Lifestyle management

Healthy eating – a balanced diet can help to keep a healthy weight, which will reduce the impact on the heart as well as helping with general health.

You can ask your GP whether you can be referred to a dietician to help with any changes to your diet.

Keeping a healthy weight – as this can help to reduce any extra pressure on the heart and lungs.

Minimising salt – reducing salt intake can help to reduce water retention (which can cause swelling in the ankles and tummy) and blood pressure, which helps with heart function. You can speak to your specialist for individualised guidance on salt intake.

Minimise alcohol – alcohol can raise your heart rate and increase blood pressure. You may not need to

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completely avoid it, but keeping within recommended guidelines can reduce any potential affects.

The Chief Medical Officer reviewed these guidelines in 2016. You can read them at www.gov.uk and search 'alcohol guidelines'.

Minimise caffeine – caffeine can raise your heart rate and increase blood pressure. As everyone is different in how they react to it, you might like to talk to your specialists about how to manage your caffeine intake.

Exercise – regular exercise can help with overall health and wellbeing, and may help with keeping a healthy weight. If symptoms are stable, exercise can be beneficial. But symptoms of heart failure, such as breathlessness and tiredness, may make exercise more challenging.

See our factsheet 'Cardiomyopathy and exercise' or talk to your GP or cardiologist about what exercise might be appropriate for you.

If you smoke – stopping smoking is important to help your overall health as well as your heart and lung function (as it can reduce oxygen levels in the blood as well as narrowing blood vessels).

You can talk to your GP or an NHS stop smoking service for help.

Cardiac rehabilitation – you may be offered this service for people with heart conditions, which teaches about diet and exercise alongside relaxation techniques and helping with emotional wellbeing.

Not everywhere has this service, but you can ask your GP or cardiologist if there are services near to you.

Surgery

When medication and devices don't fully control symptoms, surgery might be considered.

Heart valve repair or replacement – if the valves are damaged and affect the heart's function, they may be repaired or replaced to help improve symptoms. LVAD (Left ventricular assist device) – this mechanical device helps the heart to pump blood out of the left ventricle (main pumping chamber of the heart) when it is not working properly. This is currently only used to support the heart while waiting for a transplant.

Heart transplant – a small number of people may have a heart transplant if their heart failure is so severe that it can't be treated with medication or devices. This involves removing the failing heart and replacing it with the heart from a donor.

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Angioplasty and bypass surgery – this is used where heart failure is caused by coronary heart disease. The arteries may need to be widened (using an inflatable balloon to stretch them during angioplasty) or the blood supply to the heart diverted around the blockage using a blood vessel from somewhere else in the body (bypass surgery). (This is not usually used when heart failure is caused by cardiomyopathy.)

For more information visit the NHS Choices website: www.nhs.uk/Conditions/Heart-failure

Sources of further information and support

Here are some organisations which support people with heart failure, or provide further information.

Heart Failure Matters

www.heartfailurematters.org

Has information including a series of simple videos to explain the causes and symptoms of heart failure.

Pumping Marvellous

The heart failure charity www.pumpingmarvellous.org provides information and support to people with heart failure, and their families.

British Heart Foundation

www.bhf.org.uk and search 'heart failure'.

Has information on different causes of heart failure.

British Society for Heart Failure

www.bsh.org.uk

An organisation for healthcare professionals working in cardiac care, it offers some information for people living with heart failure.

Your reaction to a diagnosis

Receiving a diagnosis of heart failure can be worrying. You may not have heard of the term before. It can sound frightening if you don't know what it means: it doesn't mean that your heart is about to stop working completely, but that it needs support to help it work better. However, you may have lots of questions and be concerned about what this means for you, and how it might affect your life.

Although many of the symptoms can be controlled and managed, heart failure can still greatly affect someone's life. They might have to make changes to their life to adjust to their symptoms, as well as taking medication or having other treatments.

Some people feel overwhelmed by their diagnosis, or they may feel anxious or depressed. These feelings

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can be a normal reaction to a diagnosis, but when they become severe or persistent, they can have a big impact on someone's life. If you are feeling depressed or anxious about your condition, or it is affecting your ability to get on with life, you might find that talking to your GP, cardiologist or heart failure nurse might be helpful. Or they might suggest that you speak to a counsellor or therapist.

We are here for you

At Cardiomyopathy UK we offer help and support for you and your family. We have information about each type of cardiomyopathy as well as diagnosis, treatment and lifestyle issues. Look on our website or call us for more information. Call our helpline to talk to our cardiomyopathy support nurses. We can put you in contact with other people affected by cardiomyopathy through our support groups, support volunteers and social media. Contact us for more about our services, or look online - www.cardiomyopathy.org.

Guidelines for healthcare professionals

The following are guidelines on managing heart failure for healthcare professionals

European Society for Cardiology guidelines.
Visit www.escardio.org and search 'heart failure.'

NICE (the National Institute for Health and Care Excellence) guidance.
Visit www.nice.org.uk and search 'heart failure'.

Send your feedback to contact@cardiomyopathy.org

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