

My Marvellous Guide to Having an Echo

A Patient's Story



Authored by patients like you



HELPING PEOPLE LIVE BETTER WITH HEART FAILURE

WELCOME TO THE PUMPING MARVELLOUS FOUNDATION



Welcome to the Marvellous Guide to having an Echocardiogram (echo). The Pumping Marvellous Foundation is the UK's patient led heart failure charity, however this guide is for anyone who is having an echo regardless of the reason why. As with all our guides, it has been put together by our marvellous team of patient educators. We would also like to thank the marvellous clinical technical team at Grantham Hospital, part of the **United Lincolnshire Hospitals NHS Trust**, who ensured that all the clinical details in this booklet are correct.

Nick Hartshorne-Evans - CEO, Pumping Marvellous Foundation

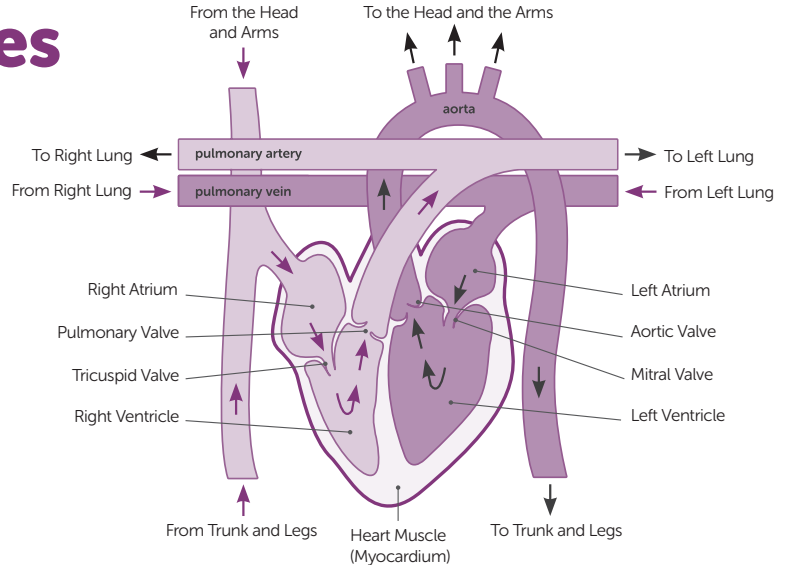
Angela Graves - Chair, Pumping Marvellous Foundation, Consultant Nurse in Heart Failure

PLEASE NOTE: this booklet should not replace and/or substitute the interactions with and advice you are given from your Healthcare Professional. If you have any concerns about your condition then do discuss them with your Healthcare Professional at the earliest opportunity.

What the heart does

The heart is an organ that pumps blood around the body. Blood containing oxygen and nutrients are needed by every part of your body in order to function. It's about the size of two fists clenched together; it sits in the centre of your chest tipping down to your left-hand side. It has different layers (one of which is made of muscle), so the heart can squeeze the blood out. It is told when to pump by a nerve that triggers the heart's own electric system.

The heart delivers the blood via arteries and it is then returned via veins. The diagram shows the inside of the heart, made up of four chambers: on the right-hand side, blood returns from having delivered oxygen around the body by the veins, the heart then sends the blood to the lungs, picks up oxygen and returns to the left side of the heart which then delivers the blood to the body via arteries. Note from the diagram the little gates letting the blood move from one chamber to another; these are called valves. Every time the heart pumps blood around the body, it is called a beat. The heart needs to be looked after in order for it to do its job effectively.



What is an echo?

Our patients tell us how significant having an echo can be. They appreciate that the test can inform their Doctors if there is anything wrong with their heart, how well it is functioning, the cause of any irregularities and the likely treatment they may require. Patients have told us that sometimes they may feel apprehensive about having an echo, fearing what it may find. For others having an echo may be a reassuring test that measures the progress that they are making. However, what all patients tell us is how appreciative they are to the various teams from around the country that provide this vital service on a daily basis.

Patients who have echoes see them as an important part of the care and treatment they receive.

It is good to remember just how significant the heart is to the body, it is a muscle that has the job of pumping blood around the body that carries oxygen and nutrients. Therefore, understanding what is happening to the heart and how well it is functioning is vital.

One of the key ways we are able to understand what is going on with the heart is by having a scan of the heart, commonly referred to as an echo or the more technical term, transthoracic echocardiogram.



How does an echo work?

An echo uses high frequency sound waves to create a moving picture of your heart, similar to a scan that shows a growing baby. This is done by placing a probe (transducer) upon the chest wall that produces an image on a screen showing the outside and inside of your heart, as well as the surrounding blood vessels attached to the heart. The picture is very accurate and shows the size, shape and layers of the heart, particularly the heart muscle. It is also able to show how the blood is moving around the heart, especially the valves which control the flow of the blood. Consequently, it is able to identify any problems there may be with the functioning of the heart and indicate a reason as to why.

What can it show?

Firstly it can indicate what an excellent job the heart is doing.

Clinicians will look out for specific issues:

- If there is damage to the heart muscle from a heart attack as result of a blockage to the arteries that supply the heart muscle.
- It can also look at how the heart muscle is structured and if there is a problem as to how it is affecting the heart.
- It can measure how much blood is being pumped out of the heart, and if it is sufficient to meet the body's needs, or if the heart is stiff and failing to fill correctly.
- How the valves are structured, and if there are any problems that are causing them to work inefficiently.
- It can show if any congenital defects (present since birth), such as holes between the chambers, are present.
- If there is an infection or virus which has affected the heart.
- If any blood clots have accumulated in the heart.
- Any rhythm problems with the heart.

What is a normal EF?

Our patient community often discuss what their ejection fraction is, meaning how well is their heart is pumping blood out of the body. This is measured in a percentage number. Normal EF is 55% or above. Reduced EF is anything below 55% (mildly reduced 45-54%, moderately reduced 36-44%, severely reduced 35% or below). What is really important is not the number of your EF, but what are your symptoms, just how well are you feeling. That is why we recommend the New York Heart Association scale to measure how effectively your heart is pumping.

The NYHA Scale

The NYHA scale is usually used by Clinicians to assess you. However as you are the only one who knows how you feel, it's a great tool to help you explain to Clinicians what's been going on whilst they aren't there.

NYHA Class

Symptoms

Class 1

No limitation of physical activity. Ordinary physical activity does not cause undue tiredness, palpitations, or shortness of breath.

Class 2

Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in tiredness, palpitations, or shortness of breath.

Class 3

Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes tiredness, palpitations, or shortness of breath.

Class 4

Unable to carry out any physical activity without discomfort and tired and short of breath, even at rest. If any physical activity is undertaken, discomfort increases.

CLASS 1

"I can perform all physical activity without getting short of breath, tired, or having palpitations."

CLASS 2

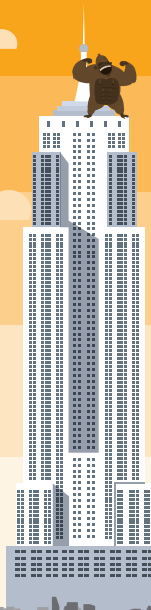
"I get short of breath, tired, or have palpitations when performing more strenuous activities. For example, walking on steep inclines or walking up several flights of steps."

CLASS 3

"I get short of breath, tired, or have palpitations when performing day-to-day activities (for example, walking along a flat path)."

CLASS 4

"I feel breathless at rest, and am mostly housebound. I am unable to carry out any physical activity without getting short of breath, tired, or having palpitations."



Does the echo hurt?

No, there are no side effects and it is extremely safe. It may be uncomfortable as occasionally the probe will need to be pressed firmly on your chest and ribcage.

Do I have to do any preparation, such as fasting?

For a normal echo, no, and you can continue to take any tablets, however there may be some specific things to do for more specialised echoes which we shall go on to mention.

What happens on the day?

You will receive an appointment letter asking you to attend a specific location at a certain time and place. If you have any difficulties with getting to your appointment or its date and time then do discuss with the team, the contact details should be on your letter or may be recorded at the end of this booklet. Ask if you may take a relative with you if that is what you would prefer or explain if you will have an assistance dog with you.

The test takes place in a darkened room to enable the operator to see the images clearly on the screen. You will be asked to strip to the waist, so wear a two-piece outfit, for example a shirt or blouse with a skirt or trousers. Wear a top that is easy for you to remove. If you feel uncomfortable on exposing the top half of your body, ask if there is a gown that you can wear. You will be asked to lay on a couch, lying on your left side. If you feel uncomfortable or feel it is affecting your breathing, then do mention this to the operator. Three small stickers will be applied to your chest which will then have leads attached so that they can measure the rhythm and rate of your heart. A probe the size of a computer mouse (transducer) will be covered with cold jelly which will then be rubbed over your ribs and chest to gain pictures of your heart. You may be asked to change position and to alter your breathing pattern. You will be unlikely to see the screen but what will appear are moving images of your heart, there will be colours appearing on the screen which indicates how the blood is flowing. You may also hear a whooshing sound which indicates the blood flowing through the heart. At the end of the procedure you will be given tissues to remove the sticky gel.

Read our Top Tips section and see what our patients have to say.

Who will perform the echo?

Your echo will usually be performed by a Specialised Cardiac Physiologist or by a Doctor. The Doctor may be a Specialist Registrar (senior trainee) or Consultant who is a specialist in undertaking complex echoes.

How long will it take?

It will depend on how much detail is required but it will generally take between 30 minutes and 1 hour.

When will I get the results, what can I ask?

Ask the Clinician what is happening on the screen, they should be able to describe the picture to you. For example, what part of the heart they are seeing at the time. Obtaining your results will depend on the team who are conducting your investigation or who has ordered the echo. You may be given the results on the day or be asked to follow up the results with your Doctor. Ask the Clinician what the procedure for you is, when the results will be available and who will give you your results. Many patients in our community tell us that the results are important to them and can

cause considerable anxiety. For the vast majority of scans, they need to be analysed by your Doctor and the results may not be immediately available. If you are keen to get the results as soon as possible then ask the person performing the scan how you can access your results as quickly as possible. Remember the vast majority of people performing scans are performing them for others therefore be considerate of the position they are in.

How often will I need an echo?

It may be that you require only one scan, or that you require further scans to monitor any cardiac condition that you may have.

I have had an echo previously and received a copy of my result that went to my Doctor. I didn't understand any of it, how can I find out what it means?

Take a look at our section regarding common terminology relating to echoes.

Other types of echo

What is a Transesophageal Echo (TOE) and why do you have one?

Some patients may require a much more in-depth picture of the heart, particularly if your Doctor wishes to see the back or the valves of your heart in more detail. If that is the case, they may ask to perform a transesophageal echo.

Do I need to do any preparation?

You will be asked to refrain from eating and drinking for approximately six hours before the procedure, however check with your team exactly how long they wish for you to fast for. You will offered some mild sedation, so you will need someone to take you to your appointment. If you have the sedation you will not be able to drive yourself home as you may feel drowsy. As with the echo, if you have any concerns discuss with your team.

What happens on the day?

You will be asked to lie down on a couch and given a sedative via a needle into a vein in your arm; this will ensure that you are very relaxed, and some patients say that they can remember little of the event and will actually sleep through the procedure. A spray is also given to the back of your throat which will numb it. The Doctor will then place a mouthguard in your mouth and you will be asked to swallow the probe. Once you have swallowed the probe, which is attached to the echo machine, it goes into the oesophagus (which is used to swallow food), as a consequence the Doctor is able to see detailed pictures of your heart. Throughout the procedure, the Doctor will reassure you and explain what is happening.

Will it hurt? Are there any side effects?

Patients say the spray is not pleasant, and it can be a little uncomfortable when the probe is withdrawn. You may have a sore throat for a couple of hours or feel your heart beat a little faster during the procedure. There is a small risk of a slight tear being caused to the throat as the probe is passed, your Doctor will explain any risks to you and ask you to sign a consent form before the procedure. Do ask any questions that may concern you to your Doctor.

How long will it take?

It is expected to take approximately 30 minutes; however, you will be asked to rest for couple of hours afterwards as you may feel drowsy. The team will then let you know when you can eat and drink. When you do go home take it easy, you can carry on with your normal activities 24 hours after your scan.

How do I get my results?

As with the normal echo, your Doctor may explain your results once you are awake from the sedation or you may be given instructions as to how you can get your results. See the section above on this subject.

What is a stress echo?

Your Doctor may wish to understand how your heart performs when it is under stress, that means when it is having to undertake some activity. These tests are often advised when it is suspected you may have coronary heart disease or have had a previous heart attack. There are two ways that this can be done.

Exercise Stress Echo

This is undertaken by means of a treadmill (running machine) or bicycle. You have an echo as normal and then you are wired up and asked to walk on the treadmill or ride the bicycle for a few minutes. A further echo is undertaken at the end of the activity.

What do I need to do to prepare for my stress echo?

You will need no specific preparation but do wear a comfortable pair of flat shoes, and avoid wearing a long skirt (see our previous section for a normal echo). Your team will let you know if you need to stop any medication or to avoid any drinks that may contain caffeine.

What happens on the day?

You are carefully monitored throughout your procedure including heart rate and blood pressure. You will have sticky pads attached to your chest. If you are particularly hairy, the Clinician may shave the areas where the pads go in order to get a good contact. The pads will have wires attached which link to a computer. Very gradually the treadmill speed is increased and so is the incline. You will be asked to say if you feel any chest pain, dizziness or undue breathlessness. You will continue until you feel you need to stop or the team will stop the test. A further echo of the heart is taken once you have come off the treadmill.

Will it hurt? Are there any side effects?

You are closely monitored during the procedure for any adverse effects. As with any form of exercise, you will get some breathlessness. Discuss how you are feeling as you are having the test with your Clinician.

How long will it take?

That depends on how long you are exercising for. Allow approximately 90 minutes for your appointment, however, you may then go home and resume your normal activities.

How do I get my results?

As previously mentioned, you may get your results on the day of your appointment or you will be told how to obtain your results. Please refer to the previous section on this subject.

Dobutamine Stress Echo (DSE)

If you are unable to perform on a treadmill due to your underlying physical health, then your Doctor will suggest a DSE. This is a means of inducing the effects of the heart being under stress by the introduction of a drug, in this case Dobutamine. It is able to provide a very clear picture of your heart with no interference of heavy breathing or tremors which you may experience taking exercise.

What do I need to do to prepare for my stress echo?

Your team may ask you to stop taking certain medication before the procedure, so do check if that is the case for you. You will be asked to refrain from having a heavy meal a couple of hours before the procedure, you will need someone to take you to your appointment as you will not be able to drive after the test. Do tell the team if you are pregnant, breastfeeding or have any allergies.

What happens on the day?

You will be having a normal echo, a scan picture is taken of your heart and the drug is slowly introduced. This is given via a needle into a vein in your arm until your heart rate increases to the desired target the team has set, they may also introduce a contrast so that clear outline pictures are seen. Further scan pictures are then taken. You will be closely monitored through the procedure. The effects of the drug wear off very quickly.

Will it hurt? Are there any side effects?

You will feel your heart beating faster and stronger as if you were undertaking exercise but do tell the team if you feel any dizziness, chest pain or breathlessness.

How long will it take?

The procedure should take approximately one hour including time to recover, and if suitably recovered, you will be able to go home and resume your normal activities.

When will I get my results?

As previously mentioned, you may get your results on the day of your appointment or you will be told how to obtain your results. Please refer to the previous section on this subject.

Top tips from our patient educators

- "Remember to wear loose and easy to remove top clothing."
- "Take some extra tissues with you in case you wish to remove the sticky gel privately."
- "Visit the toilet before you go in for your scan, especially if you take water tablets for your condition."
- "Ask when and how to get your results."
- "I always have a nibble of something to eat before I go so that my tummy doesn't rumble."
- "Prepare, sit back and relax."
- "Prepare a meal before you go so that you just need to pop it in the oven on your return."
- "I try not to stress about tests. Just try and relax, what will be will be."
- "I always try to view them as a means to an end... the quicker they are over, the quicker I can stop imagining what is wrong or can go wrong, after a while you just get used to having them."



Dictionary of terms associated with an echo

BP – Blood pressure measures the force of pressure that the heart delivers blood to your body.

ECG – Electrocardiograph, this records the electrical activity of your heart.

Echo – Echocardiogram, a scan of the heart.

HFpEF (Heart Failure with a Preserved Ejection Fraction) – Heart failure when the heart is able to pump the blood out, but is failing to relax and fill with blood due to it being stiff.

HFrEF (Heart Failure with Reduced Ejection Fraction) – When the heart pumps a reduced amount of blood out to the body.

HR – Heart rate, how fast your heart beats.

Heart Failure – How effectively your heart is pumping blood around your body and if it is sufficient to meet the body's needs.

LVEF – Left ventricular ejection fraction which measures how well the heart pumps.

LVSD – Left ventricular systolic dysfunction is what you have if your LVEF is too low.

Normal LVEF is 55% or above (not necessarily 60-65%). Reduced LVEF is anything below 55% (mildly reduced 45-54%, moderately reduced 36-44%, severely reduced 35% or below). For more information on this subject please see page 4.

Measurements – On an echo report it will indicate what sizes the heart muscles are and if they are within in the normal range.

Regurgitation – When the valves are leaking blood, this may be due to a fault with the valve or the heart failing to be able to pump the blood out of the heart.

Stenosis – When the valves of the heart are stiff and narrowed affecting the flow of the heart.

One step at a time

We hope that our Marvellous Guide has triggered thoughts around some of the questions you may have. We know this is not a position you want to be in but it's about taking small steps which is a good thing. You may never have had to deal with something like this but if you want to then self-management can be the key to a better life and enable you to find your normal self again. This may be the start of your journey so if you need help do seek out further advice from your Healthcare Professional or visit our website:

www.pumpingmarvellous.org



The wonders of social media

At Pumping Marvellous we know how important it is for patients to get support from other people who have heart failure, to share experiences, knowledge, feelings and emotions, the negatives and positives of heart failure, and yes, there are positives. People find successes in heart failure as they learn to manage the challenges of heart failure. Pumping Marvellous has looked at using new and exciting ways of providing patient to patient support. Why don't you give some of them a try! Search "help for hearts" on Facebook, or visit Pumping Marvellous on YouTube as well as the Pumping Marvellous website. In everything we do you will find rich veins of support to help you manage your heart failure better.

Good luck, good health and keep those positive pants on!



Useful Contacts - Patient Organisations and Related Services

www.pumpingmarvellous.org

The UK patient led heart failure charity, the go-to-site for both patients with heart failure and carers looking after them.

www.cardiomyopathy.org

Website to support patients with heart muscle disease.

www.ageuk.org.uk

Website with a range of information and services for the older person.

www.carersuk.org

Website of organisation for carers.

www.macmillan.org.uk

Organisation website that supports not just those with cancer but for those requiring palliative care services.

www.citizensadvice.org.uk

Information on a wide range of issues and details of local branches for appointments.

www.gov.uk/apply-blue-badge

Details as to how to apply for a blue badge, enabling free parking.

www.relate.org.uk

Organisation that provides information and counselling services for couples.

www.nhs.uk/Pages/HomePage.aspx

Link to various NHS services.

www.nhs.uk/Service-Search/Care-providers-and-care-at-home/LocationSearch/11

Information for carers.

www.gov.uk/browse/benefits

Information in regards to current information benefits.

www.acas.org.uk

Information for both employers and employees for training and mediation.

www.gov.uk/pensions-advisory-service

Pension advice, both state and private.

www.gov.uk/contact-jobcentre-plus

Employment advice and opportunities.

www.samaritans.org

Agency providing immediate support and crisis management.

www.moneyadviceservice.org.uk/en

This is an independent body set up by the government to provide information and support on a range of financial matters.

www.gov.uk/guidance/cardiovascular-disorders-assessing-fitness-to-drive

Driving information from the DVLA.

Useful Contacts - Medical Organisations and Further Information:

www.bhf.org.uk

Website to support those with a range of conditions in relation to heart disease.

www.bsh.org.uk

The Clinicians' organisation for those who specialise in heart failure.

www.nice.org.uk

NICE (National Institute for Health and Care Excellence)

NICE's role is to improve outcomes for people using the NHS and other public services. They do this by:

1. Producing evidence based guidance and advice for health and public health and social care practitioners

2. Developing quality standards for health, public health and social services

3. Providing a range of informational services across the spectrum of health and public health services

NICE Chronic Heart Failure Guidelines (under review) - www.nice.org.uk/guidance/Cg108

NICE Acute Heart Failure Guidelines - www.nice.org.uk/guidance/cg187

www.heartfailurematters.org

European Society of Cardiology website, Clinician organisation but does have patient information.

www.drinkaware.co.uk

Information on alcohol intake.

www.alcoholics-anonymous.org.uk

Support organisation for alcohol-related issues.

www.nhs.uk/livewell/drugs/pages/drugtreatment.aspx

Support organisation for drug-related issues.

www.mind.org.uk

Mental health charity.

www.england.nhs.uk

Health commissioning organisation for the NHS.

www.cqc.org.uk

Regulatory body for the NHS.

Useful Contacts - Other Charities and Non-Profit Groups

Here at Pumping Marvellous we are enthusiastic about working with other charities who, like us, are aiming to help individuals and their carers by providing information and support to manage their health and general well-being. Please find the list below:

Atrial Fibrillation Association

www.atrialfibrillation.org.uk

British Cardiovascular Society

www.bcs.com

British Heart Foundation

www.bhf.org.uk

British Heart Valve Society

www.bhvs.org.uk

British Society for Heart Failure

www.bsh.org.uk

Cardiomyopathy UK

www.cardiomyopathy.org

CRY

www.c-r-y.org.uk

Heart UK

heartuk.org.uk

Heart Failure Matters (European Society for Cardiology)

www.heartfailurematters.org

SADS

www.sads.org.uk

Useful Contacts

Government

NHS Choices
www.nhs.uk

NICE
www.nice.org.uk

Mental Health Charities

Mind
www.mind.org.uk

Rethink
www.rethink.org

General Information

Patient
www.patient.info

Travel insurance for people with heart failure
www.pumpingmarvellous.org/what-we-do/heart-failure-travel-insurance/

Driving with a medical condition
www.gov.uk/government/uploads/system/uploads/attachment_data/file/491028/aagv1.pdf

Important Pumping Marvellous Contacts



Office Tel - 01772 796542



Email - hearts@pumpingmarvellous.org



Website - www.pumpingmarvellous.org



Facebook Support Community - Search 'Help for Hearts'



Twitter - [@pumpinghearts](https://twitter.com/pumpinghearts)



YouTube - Search 'Pumping Marvellous'

Other “Marvellous Guides” for people with heart failure available in the series:

HOPE - My Marvellous Guide to Being Told You Have Heart Failure

Designed for newly diagnosed people with heart failure

My Marvellous Guide to Caring for Heart Failure Patients

A marvellous guide to help people who care for people managing heart failure

My Marvellous Guide to Having a Cardiac Device Fitted

To enable people to make an informed decision about having a cardiac device.

My Marvellous Guide to Medicines for Heart Failure

Our guide that explains how the various medicines work that you are likely to be prescribed with heart failure

My Marvellous Guide to PPCM (Peripartum Cardiomyopathy)

Designed for mums diagnosed with PPCM

My Marvellous Guide to Travelling with Heart Failure

Ideal for people wanting some help with going on holiday with heart failure

My Complete Marvellous Guide to Heart Failure

My Marvellous Big Pocket Guide to Heart Failure

All you need to know about managing your heart failure better

My Marvellous Guide to Using GTN

A simple guide to helping you take GTN spray or tablets

My Marvellous Guide to ‘Walking a Day in My Shoes’

Marvellous guide for people wishing to inform their families about heart failure

Heart Failure in Lights

A great tool to help you manage your symptoms

My Appointment Diary

Help in managing your heart failure

Pregnancy & Your Heart

Designed for pregnant mums

Marvellous Tools to help manage your heart failure with your Doctor or Nurse

So why have I got heart failure?

A comprehensive set of marvellous guides to the reasons why you may have heart failure

Marvellous Map of Heart Failure

A map of how to navigate your way around the NHS with heart failure

All guides are written by patients and clinically validated for accuracy by leading UK heart failure specialists.

To access go to our website

www.pumpingmarvellous.org



Cardio Trials

Interested in Medical Research in Heart Failure - **CardioTrials**, the charity's innovative platform, matches you with medical research and trials that best suit your needs and requirements.



CardioTrials.org



Scan the code or go to www.cardiotrials.org

Notes:

My team:

Your Carer's Name:

Your GP's Name:

Your Cardiologist's Name:

Your Heart Failure Nurse's Name (if applicable):

Your Practice Nurse's Name:

Your Pharmacy's Name:

Your Carer's Telephone Number:

Your GP's Telephone Number:

Your Cardiologist's Telephone Number:

Your Heart Failure Nurse's Telephone Number (if applicable):

Your Practice Nurse's Telephone Number:

Your Pharmacy's Telephone Number:

If you have any concerns or questions, get in touch with
Pumping Marvellous Foundation.



Another Mini Toolkit by The Pumping Marvellous Foundation Crowdsourced information from REAL patients.

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Email - hearts@pumpingmarvellous.org

YouTube - [Pumping Marvellous](#)

Twitter - [@pumpinghearts](#)

Facebook - Search “Heart Failure Aware”

Facebook Support Group - Search “Help for Hearts”



Interested in getting involved in medical research in heart failure go to [CardioTrials.org](https://www.CardioTrials.org)

Can you help us by donating or fundraising?

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