

Cardiovascular Network

Having a CRT or conduction system Pacemaker fitted

Please read this booklet before your admission.

This booklet has been compiled by the Coventry and Warwickshire Cardiovascular Network from information provided by the consultants and staff responsible for cardiac services at the University Hospitals Coventry and Warwickshire NHS Trust (UHCW).

With special thanks to: Professor Faizel Osman, Dr Michael Kuehl, Helen Eftekhari Arrhythmia Nurse Specialist.

It aims to:

- **Give you an understanding of your heart and your heart condition and why you need a CRT/Conduction system pacemaker**
- **Provide you with the information you will need before, during and after your admission**
- **Advise you of any lifestyle changes that will benefit you when you return home**

Please read the booklet carefully and keep it as a handy reference. Should you have any concerns or queries, remember that assistance is only a phone call away.



Patient Information

The following are the contact numbers for the cardiology departments of the hospitals in the network.

University Hospitals Coventry and Warwickshire NHS Trust:

024 7696 4000

- **Cardiac physiologist:**

Cardiac pacing team

024 7696 6416/02476 96419 with answer phone

Email: pacingteam@uhcw.nhs.uk

- **Arrhythmia Nursing Team:**

UHCW

024 7696 4794

Email: arrhythmianurses@uhcw.nhs.uk

- **Heart Failure Nurse Specialist:**

UHCW

024 7696 5814

- **Heart Failure Nurse Specialist (Rugby)**

01788 663944

- **Coventry Community Heart Failure Nurses**

0300 3032444

- **Cardiology Ward 21:**

02476 965780

- **George Eliot Hospital, Nuneaton:**

024 7635 1351

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- **Cardiology Specialist Nurses:**

Graham Perry and Maureen Rogers
024 7686 5195

- **Cardiac physiologist (Pacing Lead)**

024 7686 5128
Ward; CCU 024 7686 5294

South Warwickshire Hospitals NHS Foundation Trust:

01926 495321

- **Cardiology Unit Manager:**

Karen Hartley – 01926 495321
Malins Ward – Ext.4024
Squire Ward – Ext.4015
Kath Warwick – CCU – Ext. 4011

- **ECG Department:**

South Warwickshire Hospitals NHS Foundation Trust
01926 495321 Ext: 4127

You will find other useful telephone numbers and websites at the end of this booklet.

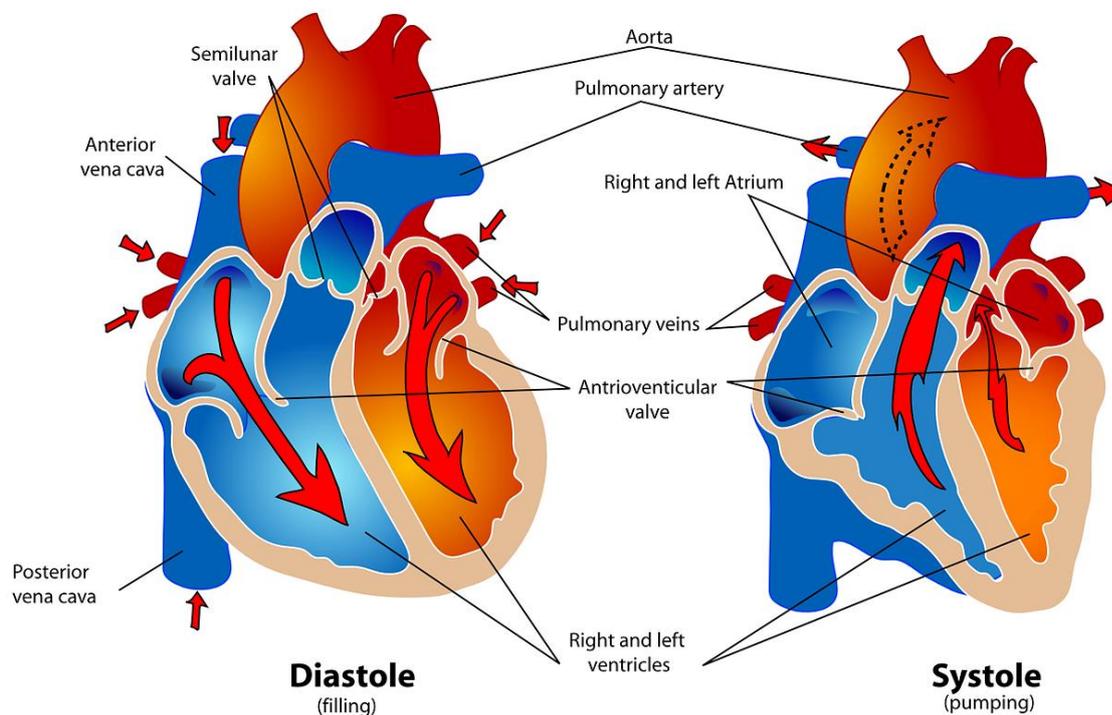
Understanding your heart and heart condition

What is the Heart?

The heart is a strong hollow muscle about the size of a fist. It lies in the centre of the chest and is tilted slightly to the left. The heart beats continuously throughout life, usually between 60-90 times per minute. It is divided into two sides, left and right, and has four chambers. The two upper chambers are called the atria and the two lower chambers are known as the ventricles.

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Its job is to pump blood, oxygen and nutrients to all parts of the body.



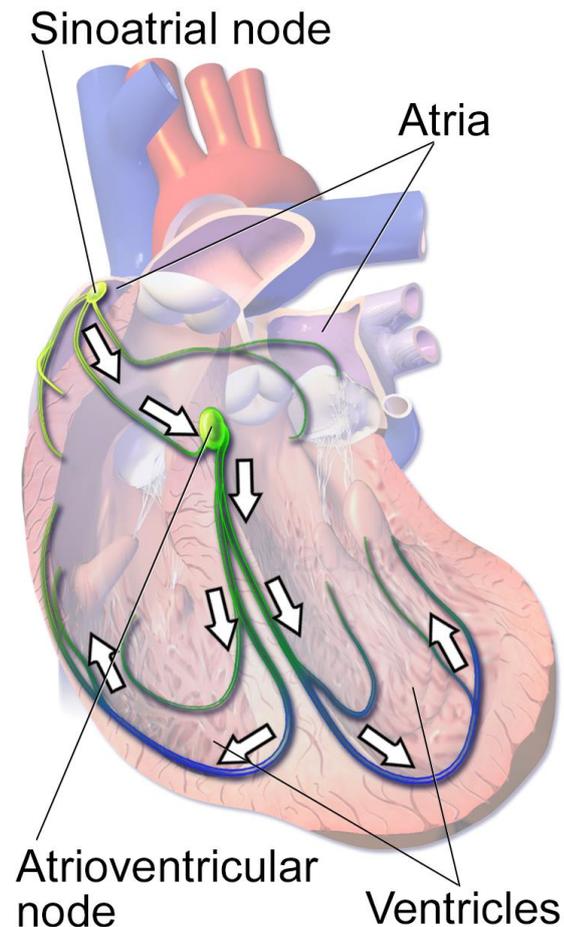
When we breathe in we take in oxygen which is vital to keep all living tissues healthy and working well. The oxygen enters our blood stream and the left side of the heart pumps the blood around our body via the arteries, delivering oxygen to the tissues, muscles and organs.

As the tissues use the oxygen, they make carbon dioxide which is removed in the bloodstream. This is taken to the right side of the heart to be pumped to the lungs where we breathe out the carbon dioxide and breathe in vital oxygen. This is a continuous process.

The pumping mechanism of the heart is controlled by electrical signals, produced in the heart's natural pacemaker called the sinus or sino-atrial (SA) node.

The following is a diagram of the complex electrical signals pathway in the heart. The green lines indicate the way that the signals pass within the heart, stimulating the heart muscle to contract and pump the blood around the heart and out to the body.

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Electrical Conduction System of the Heart

["Electrical Conduction System"](#) by [Wikimedia Commons](#), is licensed under [CC BY-NC 3.0](#)

If any part of this electrical pathway becomes disturbed or ceases to function properly, problems with the heart rhythm will occur.

Problems with the electrical pathway can be seen as a result of the 'wear and tear' of ageing. They may also occur if the heart muscle has been damaged by disease as a result of, for example, a previous heart attack, high blood pressure or disease of the heart valves.

In some cases they are the result of a defect from birth which can affect the younger age group in the population.

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Whatever the cause, the heart may not pump as well as it should do with each beat and this can lead to heart failure.

Why do I need a CRT or conduction system pacemaker?

When damage to the heart muscle causes the heart to work inefficiently, this often leads to symptoms such as shortness of breath, retaining fluid in the body and reduced activities. The electrical signals within the heart can also become affected.

The CRT or conduction system pacemaker (also known as a bi-ventricular pacemaker) is not like the traditional pacemakers used for slow heartbeats. This pacemaker is implanted with the aim of totally taking over the job of the heart's electrical conduction system and getting the lower chambers of the heart (ventricles) to pump together.

This pacemaker is not a cure for the underlying heart condition. However, research has shown that this special type of pacemaker improves symptoms for people whose heart muscle does not pump effectively.

You will still need to take your heart tablets.

Occasionally, this type of bi-ventricular pacemaker is used for people with slow heart beats if tests have shown that the underlying heart muscle does not pump well.

Conduction system pacemakers can also be implanted as an alternative to a standard pacemaker in patients who are expected to require pacing very often. There is research that has shown that a standard pacemaker can lead to a degree of heart weakness when patients are being paced very often. A conduction system pacemaker could reduce this risk.

What is a CRT pacemaker?

A CRT pacemaker is a small, smooth metal box containing a battery powered computerised electronic device. It has up to three leads (or wires) that are inserted into the heart, usually via the veins. The number of leads needed will depend on the findings of the investigations you have had.

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There is one lead placed in the right upper chamber of the heart and one lead in the right lower chamber. A third lead is placed around the back of the left lower heart chamber. These lead positions allow the pacemaker to coordinate the pumping of the heart.

The CRT pacemaker is usually implanted under the skin of the left chest wall, in a 'pocket' on top of the muscle, where it will receive signals from the leads and continuously monitor your heartbeat.

It is programmed to respond to your individual heart rhythm, based on the information we obtained during your tests and investigations.

It will monitor and correct your heart rhythm by delivering a series of painless electrical impulses known as pacing.

What is the difference between a CRT and a conduction system pacemaker?

The aim of both of these pacemakers is to improve the supply of your heart with electrical signals, that have been affected by your underlying heart condition and have cause your signals to slow down. The conduction system pacemaker uses two or three leads that are connected to the same metal box that is used for a CRT pacemaker. The main difference is the location of placing the leads .They are either implanted near the His bundle or in the middle of the muscle between the right and left heart chamber. The advantage of the conduction system pacemaker is that it can re-coordinate the pumping of your heart and result in an ECG that is looks very similar to a normal ECG with no signs of electrical delays.

What are the risks associated with implanting a CRT pacemaker?

As with any technique that involves inserting something into the body, the procedure does carry some risks, though these are quite small. Complications can be remedied, however, and are rarely life threatening.

There are slight risks associated with implanting the CRT pacemaker and also slight risks that may occur after the procedure.

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At the time of the procedure, there may be:

- Accidental damage to the blood vessels when placing the leads into the heart;
- An air leak in the lung may occur due to inadvertent puncture – this may need treatment;
- Discomfort/bleeding during the procedure;
- Very rarely, damage to the leads;
- The lead to the back of the heart is difficult to place. In about 10% of people this is not achieved. This can be due to the underlying structure of the individual's veins.

After the procedure, there may be:

- Bleeding from the insertion wound;
- Movement of the leads which would require them to be repositioned;
- Infection in the wound or the leads themselves within the blood vessels, but you will be given antibiotics before and after the procedure, to reduce these risks;
- Failure of the device to function properly.

These risks are rare, but, as part of the consent process, it is our duty to make you aware of them.

Please ask your doctor any questions you may have before you sign the consent form.

Before your admission

You will have been given information by the hospital letting you know your admission date, which ward you will be going to and what time to arrive.

Please note

If you are, or suspect that you may be, pregnant, please contact the hospital immediately, as it may not be advisable to proceed with fitting your CRT/conduction system pacemaker during your pregnancy.

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If you are on Warfarin, unless you have been otherwise advised, you will have been told **to stop** taking it **for 4 days before your admission**.

If you are on a DOAC ie, Apixaban, Rivaroxaban, Edoxaban, Dabigatran then you require to **stop taking it for 2 days before the admission**.

Please note: If you have a mechanical heart valve replacement, please discuss alternative blood thinning medication with the doctor who will be doing the procedure, before you come in.

Length of stay

You may go home the same day or stay in overnight. This will depend on your consultant, your medical condition, the time of your procedure and also whether or not you will have support at home when you are discharged.

If you live alone, have you got someone who can stay with you for a couple of days, or can you stay with them? If not, please let the nursing staff know when you come in for your admission.

Transport

You will not be allowed to drive for at least one week after you have had your pacemaker fitted, so please do not drive yourself to hospital, but arrange for someone to bring you in and collect you. If this is not possible, please ring your consultant's secretary for advice as soon as you receive this information.

Items to bring in

We advise you to bring an overnight bag with toiletries, nightwear and slippers etc.

It is also essential that you bring **all** your medication with you in their original containers, as the doctors and nursing staff will need to see them.

Please remove all make-up and nail varnish before arriving – we shall need to be able to see your natural skin colour during and after your procedure.

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Valuables

For your own safety, **do not** bring any valuables or large amounts of money into the hospital. Please remove all jewellery (except wedding rings) before coming into hospital.

On the day of your admission

You will be given an admission time depending on where you are placed on the doctor's list.

You can have a light breakfast/lunch and have sips of water before you come into the hospital.

Take all your usual morning tablets, when you have a light early breakfast, but do not take your Warfarin and any diuretics (water tablets), unless you have been specifically told to do so.

If you are diabetic:

If you are on insulin, you should have a light early breakfast with half your morning dose of insulin.

If you are in any doubt as to what you are allowed to do, please ring the ward where you will be having your admission and a nurse will be able to advise you. You will find the number in the front of this booklet. Alternatively, you can contact your consultant's secretary, by ringing the hospital.

What happens when I arrive at the hospital?

- Please report to the Main Reception area on the ground floor to book in and show the receptionist your admission letter, if you received one. The receptionist will hand you a registration form that you will need to give to the nurse or support worker on the ward.
- You will be given instructions on how to get to your ward.
- On arrival at the ward, you will be allocated a bed and will be met by the nurse or support worker who will be looking after you. They will assist

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you in getting ready for your CRT/ conduction system pacemaker procedure.

- You will be fitted with a wristband that will have your name on it and your unique hospital number. This will be used to identify you during your hospital stay. Please do not remove it until you are ready to go home.
- You will be asked some health questions and have your blood pressure and pulse recorded. An electrocardiogram (ECG) will be taken. You will have the opportunity to ask questions.
- Blood tests will be taken to check your blood clotting (INR) if you are on Warfarin.
- A doctor will come and see you to explain the procedure. If there is anything that you don't fully understand, then please ask the doctor at this time. He/she will then ask you to sign a consent form, agreeing to have the CRT/ conduction system pacemaker fitted.
- A small plastic tube (cannula) will be inserted into the back of your hand or in your arm and taped in place to allow antibiotics and any other necessary drugs to be given.
- Please tell the staff if you are allergic to penicillin, so that we can arrange for an alternative antibiotic.
- Half an hour before your procedure, the nurse will bring you a hospital gown. Wearing easy to remove clothing when you come in, will help when the time comes for you to change.
- It is also advisable to empty your bladder a short time before going for your procedure. Please ask for assistance if you need it.
- You will be given a covering dose of antibiotics before the start of your procedure and will also have to take antibiotics by mouth for three days after your CRT/ conduction system pacemaker has been fitted. If you are allergic to penicillin, then a suitable alternative antibiotic will be used.

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Fitting the CRT/ conduction system pacemaker

You will be taken from the ward by the nurse looking after you and will be handed over to the care of a nurse or support worker who will stay with you throughout your procedure.

The implantation of the CRT/ conduction system pacemaker is a sterile procedure undertaken in a Cardiac Catheter Laboratory or suitable room in the hospital equipped with an X-ray camera facility, monitoring equipment and a table on which you will be asked to lie flat for the duration of the procedure.

The procedure usually takes anything from one and a half hours to three hours, during which time you will have been given a sedative injection into the tube in your arm to make you feel pleasantly drowsy. You will be attached to a heart monitor throughout the procedure.

After this, the area identified for insertion of the CRT/ conduction system pacemaker over your left chest wall, just under your collar bone, may be shaved if necessary, cleaned with a skin disinfectant preparation and injected with a local anaesthetic.

A small incision (cut) 5-8cms.in length will be made and a small tube will be passed into a large vein. Through this tube, the leads will be guided with the help of the X-ray camera into your heart. The leads are then tested and attached to the CRT/ conduction system pacemaker box which contains the miniature battery and computer.

A small pocket is formed under the skin of the chest wall and the box will be carefully inserted into this pocket.

Before completion of the procedure, your cardiologist will test the device to make sure that it is working properly.

When the tests are complete the wound will be closed with dissolvable stitches. These will dissolve when they have done their job of holding the wound edges together to allow healing, so you will not need to have them removed.

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A dressing will be secured over the wound and you will be ready to go back to the ward.

On your return to the ward

- Your ward nurse will check your wound from time to time to look out for any signs of bleeding or swelling. It is wise to rest for a couple of hours after your procedure.
- It is essential to restrict your arm movement on the affected side where your CRT/ conduction system pacemaker was fitted, particularly refraining from lifting your arm above your head. This will reduce the risk of the leads moving or becoming displaced.
- Your blood pressure and pulse may be taken at intervals during this time.
- You will be able to eat and drink as soon as you feel like it, unless you require further tests.
- The local anaesthetic will gradually wear off over the next couple of hours. Please ask your nurse for some painkillers if you feel any discomfort at this time.
- You will normally be able to go home on the same day or the day after your procedure, but the cardiologist will require a chest X-ray in the X-ray Department, to ensure that the leads are safely in the correct position, before you are discharged.
- A cardiac physiologist will also check that your device is working properly and to adjust your CRT/ conduction system pacemaker's programme, if required. You may be taken to the Cardiac Physiology Department to have this painless check.
- You will be provided with a special identification card that will contain your personal details together with details of the make and model of your pacemaker and the leads used. It will also give details of your individualised programme setting. You will be advised to carry this card with you at all times.

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- As previously indicated, you will be given antibiotics to take home with you. You will take these by mouth for three days after your procedure.

Caring for yourself at home

You may feel slightly tired for a couple of days while you are recovering from your procedure.

You may remove the dressing covering your wound 48 hours after the CRT/ conduction system pacemaker has been fitted. The wound should then be left uncovered to promote healing.

You will have some bruising around the wound area and that can sometimes go around the chest area and down onto the arm. This is quite normal, but the wound itself should not be red or gaping and you should not feel feverish.

Your ward nurse will have checked your wound and dressing before you left for home, but if you notice further bruising or swelling or if it oozes or bleeds or becomes hot or tender, then go to your GP as soon as you can.

You may need another course of antibiotics or you may need to be referred back to the hospital team for their advice.

Remember to wear loose fitting, preferably cotton clothing for the first few weeks, to prevent rubbing which could make your wound sore.

Please avoid any excessive movement of your arm on the side of your wound for about four weeks after your procedure to prevent movement of the leads during the healing process. This will mean that, though you may do light housework; you should not be doing any work that requires you to stretch your arms, such as mowing or hanging out clothes on a washing line.

You are also advised not to do any heavy lifting, such as carrying shopping bags or moving heavy furniture.

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Because your wound will have been sewn together with a dissolvable stitch, it should heal without the need to remove any stitches, but, again, please arrange to see the nurse at your GP's practice if you have any concerns at all.

Don't be afraid to ask for help from your family and friends and take it when it is offered!

Personal Hygiene

Gentle, unperfumed soaps or clean, warm water are ideal when you have a bath or shower. Strongly perfumed soap, talc, body lotion and deodorants may all irritate the wound and cause an infection.

If you have a power shower, it is wiser to have it on a more gentle setting until your wound is properly healed. After bathing always ensure that your wound area is gently patted dry with a soft clean towel.

Outpatient checks

You will probably have visited the pacemaker clinic before you were discharged, or at least have had the opportunity to meet the staff who will be looking after you in the future.

The cardiac physiologist will give you written information about the settings (programme) for your pacemaker which you must carry with you at all times.

Your first check will usually be in about 4-6 weeks' time. Information stored in your pacemaker will be retrieved at this time, via a hand held device placed over your skin.

The procedure lasts about 10-25 minutes and is completely painless.

The information is important for us to be able to decide if you need any further adjustments, and to let us know the device is working effectively.

Please take advantage of this visit to ask any questions, relating to any concerns you may have about living with your CRT/ conduction system pacemaker.

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You will continue to visit the pacing clinic on a regular basis.

Condition identifying jewellery

You may have heard of Medic Alert and SOS Talisman 'jewellery'. If you are diabetic you may already own one of these pieces.

They are bracelets or neck pendants which can store vital medical information about you and your heart condition and are particularly useful in the event that you are unable to communicate details of your condition yourself. They are easily recognisable to the medical staff who may be called to treat you.

They are not provided by the NHS and therefore have to be bought by you, but it is worth asking if you could get help in purchasing them and your local cardiology department may be able to provide you with helpful information.

Living with your CRT/ conduction system pacemaker

Medication

You will need to continue to take all your previous heart medication unless your cardiologist has advised you that it is safe to stop taking any of them. Never suddenly stop taking your drugs unless they have asked you to.

Your pacemaker's battery

As you know, your CRT/ conduction system pacemaker has a long-life battery which will usually last from 6 to 10 years. The tests done at your clinic visits will keep track of this with you and the staff will arrange for the box to be replaced when this is necessary.

Sleep

Some people find it difficult to sleep for a while after they have had a CRT/ conduction system pacemaker fitted. Patients who have already had a CRT/ conduction system pacemaker fitted have offered the following advice: try sleeping on your back or on the opposite side to where the CRT/ conduction system pacemaker was fitted for the first few weeks. Support yourself with pillows until you get into a comfortable position. After

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the first few weeks you will most probably be able to adopt your normal sleeping position again.

Diet

Eating a well balanced diet, low in salt, cholesterol, sugar and saturated fat is important for a healthy heart and will not be as boring as it sounds, if you follow the advice given in 'Eating for your heart' (booklet no: HIS5) from the British Heart Foundation (BHF). If you eat ready prepared meals, it is advisable to read the information labels to assist you to make a healthy choice.

The British Heart Foundation also produces a booklet called 'Taking control of your weight', (booklet no: G198).

It is also important for people whose heart function is compromised to reduce their intake of salt. The BHF booklet 'SALT' can give you tips to reduce your salt intake.

Contact details for the BHF are at the back of this booklet.

Alcohol

Your consultant will already have advised you about your alcohol intake and it is important that you follow this advice as part of your treatment plan. The recommended guidelines are that you should not exceed 14 units per week for man and woman, with 2 alcohol free days in the week.

Apart from having an effect on your liver, alcohol can unfavourably affect your weight and your blood pressure. It can also interact with some medications and increase any side effects you may experience.

Please follow this advice for your heart's sake.

Smoking

Stopping smoking is one of the best things you can do for your heart and health in general, and also for the health of those close to you. It is also recognised that it can be very difficult to stop!

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Non-smoking aids, such as nicotine patches, gum, lozenges, sprays etc., are now readily available on prescription from your GP, through a smoking cessation programme, or you can buy them over the counter in pharmacies and supermarkets.

You can also join a support group.

Ask the nursing staff for information, before you are discharged.

There are some useful telephone numbers to help you stop smoking in the back of this booklet.

Exercise and keeping fit

Walking and sensible exercise which raises your heart rate are perfectly safe and, indeed, beneficial in keeping you fit and helping you to maintain a healthy weight. Do take care to warm up slowly, so that your heart rate has time to adjust to the change in activity.

Exercise at a level that makes you feel slightly breathless. This is quite safe and will help you to improve your fitness.

You may find at first that you tire more easily, so stop and rest. Life is not a race!

If you have any doubts, discuss them with the staff in the cardiology department.

Sporting activities

Golf, tennis, hockey, squash, badminton or other sports involving swinging your arms and stretching must be avoided until your cardiologist is satisfied that your device and leads are firmly fixed in the required position. Please ask for further advice on these issues, as you progress along your treatment pathway.

Many sports, such as football, rugby, boxing, martial arts and other contact sports will now be considered too dangerous, because there may always be the possibility of damage to your device, as it sits so close under the skin. Again, your cardiology team will be able to advise you.

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Sex

There is no set rule about when to resume sexual activity. Wait until you and your partner are both comfortable with the idea. For the first few weeks, it is advisable to avoid any position that could put a strain on your affected arm or chest, to allow your chest wall to heal properly.

Emotions

It is natural to feel anxious about your new device at first, but try to remember that your CRT/ conduction system pacemaker **will** monitor and help your heart to function more efficiently. This is what it was designed to do.

Be reassured that most people experience feelings of low mood and tearfulness, together with anger at times as a result of any heart condition. These feelings will pass over time as you adapt to having a CRT/ conduction system pacemaker, but if they do not, don't suffer in silence; tell your cardiology team or GP who will be able to help you.

Work

You will have discussed what type of work you are employed to do with the cardiac team before going home from hospital.

The cardiac team will be able to offer specialist advice on when you can safely return to work, based on the level of activity within your job. Much depends on the type of work that you do and it is always advisable to discuss your return with your employer.

Driving

If you drive a motor car or ride a motor bike, it is essential to let the DVLA know that you have had a CRT/ conduction system pacemaker fitted.

Usual restrictions from driving are for one week after your procedure, but it will very much depend on your personal level of wound healing and fitness, as to whether you will be safe to drive by then. Your GP or cardiology team will be able to give you more detailed advice on this.

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If you have a Group 2 licence (LGV/PCV) entitlement, you must let the DVLA know and in this case **you will not be able to drive any vehicles in this group for at least six weeks**, after which you may be allowed to resume driving, provided there is no other disqualifying condition.

The DVLA will send you a questionnaire to complete after you have let them know about your CRT/ conduction system pacemaker. This will also determine your fitness to drive.

For more information on driving restrictions, you may visit the DVLA website – www.dvla.gov.uk or ring them on 0300 790 6806.

Please remember that it is also important to let your insurance company know that you have a CRT/ conduction system pacemaker.

It is worth noting here that all the above restrictions also apply if you have to have a procedure to change your device when the battery runs out.

Holidays

We all need a holiday! Having a CRT/ conduction system pacemaker fitted does not mean that you may not benefit from this important aspect of your life. You will be able to travel both at home and abroad, even if your destination is in a distant country.

Flying should pose absolutely no problems for you, even on long flights to New Zealand, for example, provided your cardiologist is happy with your underlying heart condition.

However, please make sure that your chosen destination has an adequate health service with facilities to manage an emergency cardiac condition. Your consultant must be informed of your plans, so that they may advise you appropriately.

If you are planning to be away for some months, let your pacemaker clinic know, so that they can arrange to let the local pacemaker centre nearest to your resort know if you need a follow-up appointment.

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Wherever you go, remember to take your special CRT/ conduction system pacemaker identification card with you.

Take a full list of all the drugs you take and their doses with you. It will be very useful, should you need treatment while you are away.

If you need vaccinations, please check with your GP or cardiology team to make sure that these will not adversely affect any medication you are taking for your heart condition. This applies particularly to the interaction between cardiac anti-arrhythmic drugs and drugs used to prevent malaria.

Holiday insurance

As with all chronic medical conditions, holiday insurance may be more difficult for CRT/ conduction system pacemaker patients. The majority of insurance companies will require a letter from your cardiologist confirming that you are fit to travel and are able to fulfil certain health criteria. This will vary from company to company.

Your level of cover will also depend on your underlying condition, so don't forget to read the small print before you accept any offer. It may be wise to shop around to find the most economical cover for you, but do not be tempted to settle for cover that will not meet your needs in the event of a medical emergency.

The Arrhythmia Alliance, the heart rhythm charity, has a very comprehensive list of insurance companies who cater for people with chronic health problems. You can contact the Alliance via their website: www.arrythmiaalliance.org.uk or by telephone on 01789 450787.

Further important information

Interference with your device

There are many stories about how electrical interference can disrupt the electrical signalling of your CRT/ conduction system pacemaker and stop it from working properly. Most of these stories are not true, so please do not worry. Your cardiology team will be able to tell you what is likely to cause problems and what is completely safe.

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Below is some useful information:

Mobile telephones

These are usually safe, but can affect your CRT pacemaker if they are held closer than 15cms (6ins) to where it was inserted. Telephones transmitting more than 3 watts are particularly disruptive. In these cases, hold the 'phone to the ear opposite to where the device is fitted.

Never carry your mobile in a breast pocket; it is safer in a bag or a trouser pocket. Other people can safely use a mobile near to you without any problem.

You may have a cordless phone at home. Fortunately, these do not pose any risk, provided that you never hold the handset over your chest near your device.

iPods

Much the same advice applies to iPods. Don't put them in a shirt/blouse pocket over your CRT/ conduction system pacemaker. If you strap your iPod to your arm when you are listening to it, make sure it is on the arm opposite to where your CRT/ conduction system pacemaker was fitted.

Magnets

Most of the equipment you would use around the home, in the office or workplace is not going to have an adverse influence on your CRT/ conduction system pacemaker provided that you keep at least 15cms/6ins. away, but ensure that your domestic appliances are in good repair and are correctly earthed, where earthing is required.

The CRT/ conduction system pacemaker is very sensitive to strong electrical magnets and could be affected if it comes into close contact with any of the following pieces of domestic equipment -

- Stereo speakers in large stereo systems
- Boom boxes
- Transistor radios

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The same applies to industrial equipment such as:

- Some motors
- Arc welders
- Generators

It is, therefore, very important that you avoid all strong magnetic fields. Your cardiac physiologist will be happy to answer any questions you may have about this.

Airport Security Systems

This is an area where there may be a small risk of interference with your CRT/ conduction system pacemaker. You should, therefore, not go through airport security system equipment, if at all possible, and should show your special CRT/ conduction system pacemaker ID card to the security staff who will then usually hand-search you. If you cannot avoid going through the security machine, then make sure that you walk through quickly.

Shop Security Systems (Electronic Article Surveillance)

These may interfere with your CRT/ conduction system pacemaker. So you should walk through the door briskly without loitering.

In the hospital environment

If you should need hospital or dental treatment, it is important that you let the medical and nursing staff know that you have a CRT/ conduction system pacemaker and show them your identification card. If there is any question of safety they will contact your cardiology department to ensure that they are treating you appropriately.

People who have any type of pacemakers **should not have:**

- MRI scans (magnetic resonance imaging), unless a specific MRI-safe pacing system has been implanted or their hospital has experience in scanning MRI legacy devices (**such as UHCW**).
- TENS devices used to control pain by way of electrical impulses;
- Some physiotherapy treatments – tell your physiotherapist about your device.

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This is because the medical equipment used can cause interference with your CRT/ conduction system pacemaker.

It is also very important that, under ordinary circumstances, **you do not have:**

- Electro-cauterisation to stop bleeding during an operation;
- Shock-wave lithotripsy to get rid of kidney stones, etc.

However, some pacemaker programmes can allow these procedures. Please ask your consultant to get information about your device from the Pacing Department, if these treatments are proposed for you.

People who have pacemakers can have:

X-rays, CT scans and mammograms

X-rays do not interfere with the function of your CRT/ conduction system pacemaker and it is safe for you to have CT scans and mammograms, but the same rule applies as with any other medical treatment, you must let the staff at the hospital know that you have a CRT/ conduction system pacemaker.

Radiotherapy

If your consultant feels that any medical condition you may have would benefit from radiotherapy, then it is important that they get in touch with the cardiology department managing your care to discuss any proposed treatment, particularly the levels of radiotherapy to be used.

Please remember that in spite of all the above warnings, it is highly unlikely that you will have any of these problems with your CRT/ conduction system pacemaker.

Advice for patients and carers

If you want any further information, below is a list of useful email addresses or telephone numbers to assist you:

Patient Information

British Heart Foundation

Greater London House

180 Hampstead Road

London NW1 7AW

Tel. no: 0207554 0000

Heart Information Line: 0300 330 3311

www.bhf.org.uk

Arrhythmia Alliance

PO Box 3697,

Stratford upon Avon

Warwickshire, CV37 8YL

Tel no: 01789 450787

www.arrythmiaalliance.org.uk

NHS Direct (health advice and information)

Tel no: 0845 46 47

www.nhsdirect.nhs.uk

NHS Smoking Helpline

Tel: 0800 0224332 or 08001690169

<http://smokefree.nhs.uk/ways-to-quit/call-the-nhs-helpline/>

Stop Smoking Coventry

Tel: 0800 051 1310

www.coventrypct.nhs.uk

Warwickshire Stop Smoking Service

Tel: 0800 085 2917

www.smokefreewarwickshire.org.uk

Patient Information

Age UK

Free helpline: 0800 009966

www.ageuk.org.uk

Coventry and Warwickshire Cardiovascular Network

Westgate House

21 Market Street

Warwick

CV34 4DE

Telephone: 01926 493491 ext. 622.

We hope that reading this booklet will have been helpful to you and given you an understanding of what will happen to you during your hospital admission and that it will continue to be a useful resource for you after your CRT pacemaker has been fitted.

Obviously, should you have any concerns, please contact the staff involved in your care on the number you will find at the beginning of this booklet.

Peggy Coleman – Project Lead, Coventry and Warwickshire Cardiovascular Network.

The Trust has access to interpreting and translation services. If you need this information in another language or format please contact 024 7696 5666 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

To give feedback on this leaflet please email feedback@uhcw.nhs.uk

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