

Cardiology

Implantable cardioverter defibrillator (ICD)

Please read this booklet before your admission.

This booklet has been compiled and edited by the Coventry and Warwickshire Cardiovascular Network from information provided by the staff responsible for cardiac services at the following hospitals:

- University Hospitals Coventry and Warwickshire NHS Trust (UHCW)
- The Hospital of St. Cross, Rugby
- George Eliot Hospital, Nuneaton
- South Warwickshire General Hospital NHS Trust

It aims to:

- give you an understanding of your heart and your heart condition.
- provide you with the information you will need before, during and after your admission.
- advise you of any lifestyle changes that you may need to make when you return home.

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



Patient Information

The following are the contact numbers for the hospitals in the network.

Please ring the number of the hospital where you had your procedure done.

University Hospitals Coventry and Warwickshire NHS Trust:

024 7696 4000

Cardiac physiologist:

024 7696 6416 (with answerphone)

Ward Manager for Cardiology Ward 10:

024 7696 5637

Arrhythmia Nurse Specialists:

024 7696 4794

George Eliot Hospital, Nuneaton:

024 7635 1351

Chief cardiac physiologist (GEH):

024 7686 5128

Specialist nurses:

024 7686 5195

Ward CCU:

024 7686 5294

South Warwickshire Hospital:

01926 495321

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

Understanding your heart and heart condition

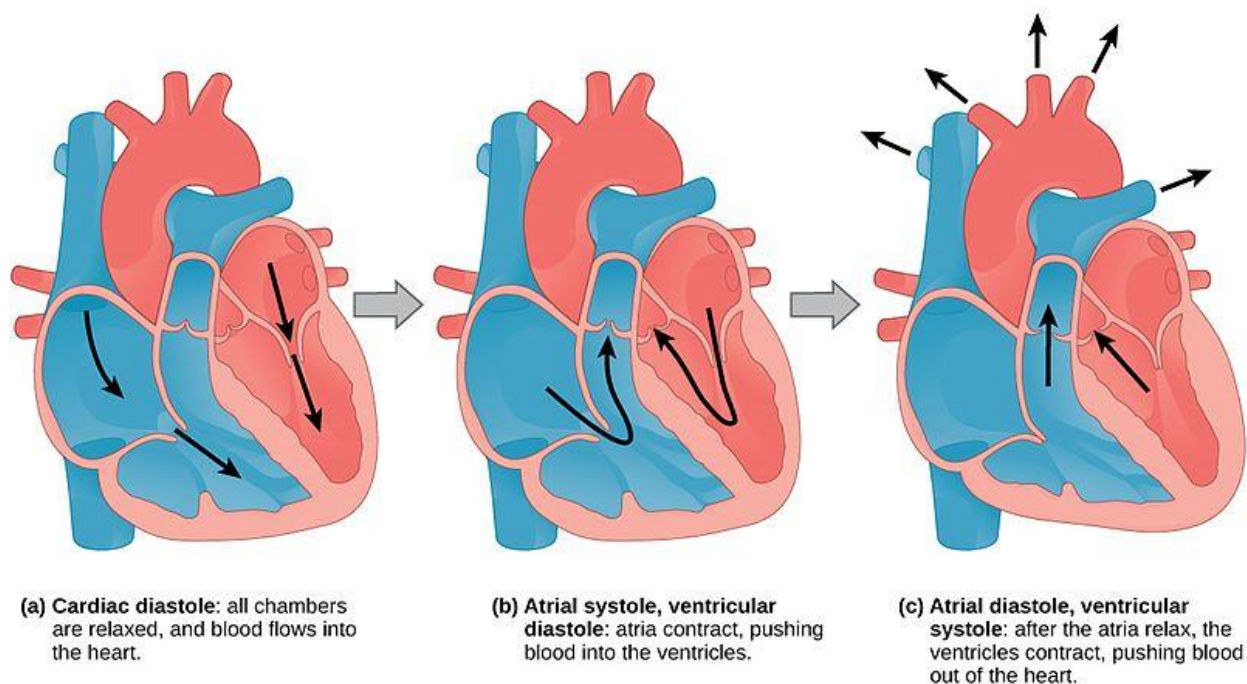
What is the heart?

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 and 90 times per minute.

It is divided into two sides – left and right – and has 4 chambers. The two upper chambers are called the atria and the two lower chambers are known as the ventricles.

The heart's job is to pump blood, oxygen, and nutrients to all parts of the body.



“[The Cardiac Cycle](#)” by CNX OpenStax is licenced under [CC BY 4.0](#)

During (a) cardiac diastole, the heart muscle is relaxed and blood flows into the heart. During (b) atrial systole, the atria contract, pushing blood into the ventricles. During (c) atrial diastole, the ventricles contract, forcing blood out of the heart.

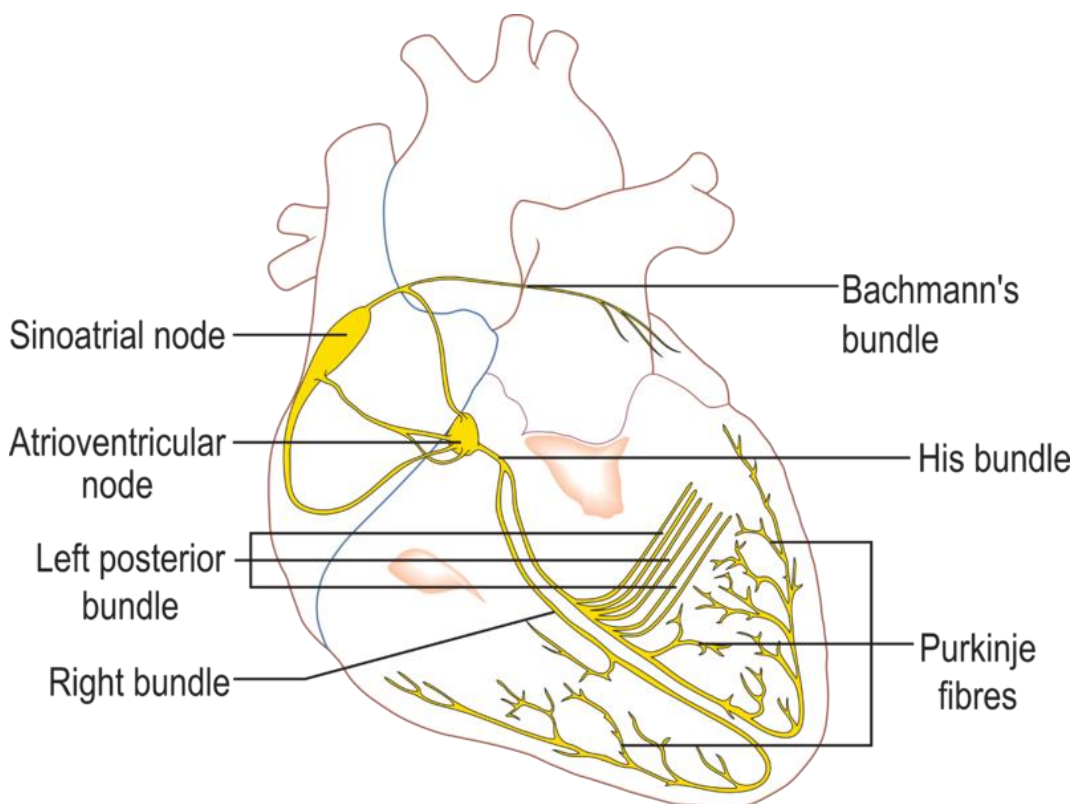
Patient Information

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 which are produced in the heart itself.

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



“[Electrical conduction system of the heart](#)” by [MadHero88](#) is licenced under [CC BY 4.0](#)

Patient Information

If for some reason this electrical pathway becomes damaged or ceases to function properly, problems with the heart rhythm will occur.

Abnormal heart rhythms affecting the lower part of the heart (the ventricles) and are known as **ventricular tachycardia** and **ventricular fibrillation**.

These abnormal heart rhythms are not strong enough to pump sufficient blood, and therefore oxygen, around the body. This will make you feel extremely unwell or in some cases may lead to a threat to your life.

Why do I need an ICD?

You were referred to see the consultant cardiologist because the electrical signals needed to allow your heart muscle to contract normally have either not been working properly, or tests that you have had and/or your family history of heart conditions leads them to believe that you are likely to suffer from abnormal heart rhythms if you do not receive treatment.

If you have already experienced heart rhythm problems, your cardiologist will have informed you that drug treatment alone may not be sufficient to protect you from suffering the effects of continuing heart rhythm problems (**arrhythmias**), and that the best treatment for you would be to have an **ICD** fitted. Treatment in these cases is known as **secondary prevention**.

If you have not yet suffered the effects of cardiac arrhythmia, but are deemed to be at risk, then this treatment is known as **primary prevention**.

What is an ICD?

An **ICD** is an **implantable cardioverter defibrillator**. This is a metal device consisting of a box the size and weight of a small pack of playing cards. The box contains a battery powered computerised electronic device. It has one or sometimes two leads (or wires) which are connected to the heart, usually via the veins.

It is usually implanted under the skin of the left chest wall in a 'pocket' behind the muscle. Here, it will receive signals from the leads and continuously monitor your heartbeat.

Patient Information

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

The ICD will detect any abnormal heart rhythms as soon as they occur and treat them by delivering a series of electrical impulses known as **pacing**. It will also deliver a small **electric shock** to restore your normal heartbeat when pacing alone is not sufficient.

Both these treatments enable the heart to return to its normal rhythm, working much more effectively than drugs alone. However, continuing to take your heart drugs may reduce the frequency of the arrhythmias. Your cardiologist will decide if this is the best treatment for you.

When the ICD pacing impulses are restoring your heart rhythm, you may have already begun to feel slightly unwell, but usually the impulses restore your heartbeat to normal.

If the pacing impulses fail to normalise your heart rhythm, the ICD will need to deliver a shock to restore your heartbeat. In this instance, you may feel like you have had a big thump in the chest.

This is quite disconcerting when it first happens, but the feeling should pass very quickly. If you have anyone near you when this happens, please be assured that it is not harmful to them, although they may feel a slight tingling sensation.

If you feel unwell or begin to sense that your heart rhythm is changing or going too fast, it is advisable to stop what you are doing and rest until the ICD has corrected the arrhythmia.

You may be quite upset the first time you receive shock therapy and may need help and support and to talk it through with someone. Please contact your local pacing department who will be happy to listen to your concerns and support you.

S-ICD (Subcutaneous implantable cardioverter defibrillator)

Your doctor may suggest you need an S-ICD. The S-ICD does not have wires that go directly into the heart. It is implanted just under the skin on the left side of your chest.

The device is connected to one insulated wire (lead), placed just under the skin alongside the breast bone, which senses the heart's rhythm. The S-ICD leaves the heart and blood vessels untouched and intact, presenting a less invasive option and is appropriate for some people.

Depending on the reason for implanting an ICD, your doctor will decide whether this type of ICD is right for you.

What are the risks associated with implanting an ICD?

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

There are slight risks associated with implanting the ICD and slight risks which may occur after the procedure.

At the time of the procedure, there may be:

- accidental damage to the blood vessels when placing the lead(s) into the heart
- an air leak in the lung may occur due to inadvertent puncture - this will need treatment
- discomfort/bleeding during the procedure
- very rarely, damage to the lead(s)
- reaction to the drug used to sedate you

Patient Information

After the procedure, there may be:

- bleeding from the insertion wound
- movement of the lead(s) which would require them to be repositioned
- infection in the wound or the lead(s) themselves within the blood vessels - you will be given antibiotics before and after the procedure to reduce these risks
- failure of the device to function properly

As previously stated, the risks are rare, but it is our duty to make you aware of them before you sign the consent form to allow us to go ahead with your treatment. Please do not hesitate to ask your doctor any questions you may have to help address your concerns before you sign the consent form.

Remember that having an ICD fitted will reduce the risk from any future heart rhythm problems, and may allow you to get on with your life with fewer restrictions.

Before your admission

You will receive a letter from the hospital in which your admission date and ward will have been identified.

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 ICD during your pregnancy.

About your admission

Length of stay

You will expect to come in for the day, but this will depend on your consultant, your medical condition, and 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.

Patient Information

Transport

You will not be allowed to drive for some time after you have had your ICD fitted, so please **do not drive yourself to hospital**. 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.

You may wish to have someone to stay with you on the ward to support you during your admission. You are welcome to do this, but please keep other visitors to a minimum to enable you to benefit from rest after the procedure.

Items to bring in

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

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.

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.

Preparing for your admission

Morning admission:

You are expected to arrive on the ward at about 8am.

Your procedure will take place between 9am and 1pm.

When do I stop eating and drinking before the morning procedure?

You can have an early light breakfast at 6am and take your usual morning tablets, apart from your **diuretics (water tablets)**.

All the other tablets you usually take in the morning should be taken when you have your light early breakfast.

If you are diabetic:

You **must stop** taking your metformin /glucophage **one day before** your admission

You can **restart** your diabetic tablets again **one day after** your procedure.

If you are on insulin, you should have a light early breakfast at about 6am with half your morning dose of insulin.

All patients may continue to drink water after breakfast until the time of their procedure.

Patient Information

Afternoon admission:

You are expected to arrive on the ward between 10am and 11am.

Your procedure will usually take place between 1pm and 5pm.

When do I stop eating and drinking before the afternoon procedure?

You can have an early breakfast at around 8am and take your usual morning tablets apart from your **diuretics (water tablets)** before you come into hospital.

If you are a diabetic:

You **must stop** taking your metformin/glucofage **one day before** your admission, and then **re-start** your diabetic tablets again **one day after** your procedure.

If you are on insulin, you should take half your morning dose with your breakfast around 8am.

Please note that all other tablets you usually take in the morning must be taken with your early breakfast.

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. Alternatively, you can contact your consultant's secretary.

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. The receptionist will hand you a registration form that you will need to give to the nurse or support worker on the ward.
- She will also give you instructions on how to get to your ward.
- On arrival at the ward, you will be allocated a bed and will be met by a nurse or support worker who will be looking after you. They will assist you in preparing for your ICD procedure.
- You will be fitted with a wristband which 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 this until you are ready to go home.
- You will be asked some questions, have your blood pressure and pulse recorded. An electrocardiogram (ECG) will be taken. You will also 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. They will then ask you to sign a consent form, agreeing to have the ICD fitted.
- A small plastic tube (cannula) will be inserted into the back of your hand or in your arm and taped into place to allow a sedative and antibiotics to be given.

Please tell the staff if you are allergic to penicillin, so that we can arrange for an alternative antibiotic.

- 30 minutes before your procedure, the nurse will bring you a hospital gown. It is advisable to wear clothing which is easy to remove when you come in, to help you 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.

Patient Information

Fitting the ICD

The implantation of the ICD is a sterile procedure taking place in a Cardiac Catheter Laboratory or suitable hospital room. This room will be equipped with an X-ray camera facility, monitoring equipment, and a table on which you will be asked to lie for the duration of the procedure.

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 procedure usually takes from 1 to 1 ½ hours. During this 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.

Antibiotics will also be given prior to starting the procedure. As previously stated, if you are allergic to penicillin, then an alternative antibiotic will be given. Similarly, when you go home, an alternative antibiotic will be given to you to complete the course.

After this, the area identified for insertion of the ICD over your left chest wall (or in some cases your right chest wall), just under your collar bone, may be shaved if necessary, cleaned with a skin disinfectant preparation and injected with a local anaesthetic.

Very rarely, the procedure may be done under general 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, a lead will be guided with the help of the X-ray camera into the lower chamber on the right side of your heart (right ventricle).

Occasionally, 2 leads will be required. This time one of the leads will be passed into the upper chamber on the right side of your heart (right atrium).

Patient Information

The lead is then tested and attached to the ICD box which contains the miniature battery and computer.

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

Before completion of the procedure, your cardiologist will want to make sure that the device is working properly. You will be given extra sedation before the device is put through the test pacing and shock needed to check the device is fully functional.

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

A small 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. You will need to rest in bed for a couple of hours, depending on how sleepy you are because of the sedation.

It is essential to restrict your arm movement on the affected side where your ICD was fitted. Try to avoid lifting your arm above your head. This will reduce the risk of the lead(s) moving or becoming displaced.

Your blood pressure and pulse may also 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. However, most patients prefer to sleep for a while after their procedure, due to the effects of the sedation.

Patient Information

The local anaesthetic will gradually wear off over the next couple of hours. If you experience discomfort at this time, please ask your nurse for some painkillers.

As previously indicated, you will normally be able to go home a day after your procedure. Before this, the cardiologist will want you to have a chest X-ray in the X-ray Department to check that the lead is safely in the correct position.

A cardiac physiologist will also want to check that your device is working properly and to adjust your ICD programme if required.

You may be taken to the Cardiac Investigations Department to have this check.

You will be provided with a special identification card, which will contain your personal details, together with details of your ICD programme, the number of leads used and the make and model of your device. You will be advised to **always carry this card with you.**

Caring for yourself at home

You may find that you feel slightly drowsy for a couple of days while you are recovering from the procedure, particularly from the effects of the sedation. It is therefore wise not to make any important, life changing decisions until these feelings have worn off.

- You may remove the dressing covering your wound, 48 hours after the ICD has been fitted.
- The wound should then be left uncovered to promote healing.
- You will have some bruising around the wound area. This is quite normal, but the wound should not be red or gaping.
- If you have any concerns, contact your GP who will be able to advise you or arrange for a district nurse to visit if you are unable to get out and about.

Patient Information

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 until our check has established that your wound has fully healed. This will mean that, though you may do housework such as light hoovering or ironing, 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.

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 advised to have it on a gentle setting until your wound is properly healed. After bathing, always make sure that your wound area is gently patted dry with a soft, clean towel.

Your wound

Your wound will have been sewn together with a dissolvable stitch. Your ward nurse will give you a letter to take to your practice nurse or arrange for a district nurse to call to check that the stitches are dissolving properly.

Do ask to see your wound before you leave the hospital. If it then changes in any way when you are at home, for example, if there is further bruising, swelling or if it oozes or bleeds or becomes hot or tender, then go to your GP right away. You may need a further course of antibiotics or you may need to be referred back to the hospital team for their advice.

Patient Information

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 ICD, which you must **always carry with you**.

Your first check will usually be in about 4-6 weeks' time. Information stored in your ICD will be retrieved at this time via a handheld device placed over your skin. The procedure lasts about 5-10 minutes and is completely painless. **It does not involve delivering a shock.**

The information is invaluable for us to be able to decide if you need any further adjustments or just to let us know the device is working effectively. It will also give an indication of how many times the ICD has been required to correct your heart rhythm during the month since it was fitted.

Please use this visit to ask us questions about any concerns you may have about living with your ICD.

You will continue to visit the pacing clinic on a regular basis now that you have had an ICD fitted.

Condition identifying jewellery

You may have heard of Medic Alert and SOS Talisman 'jewellery'.

Indeed, 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 purchased 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 ICD

Medication

You will need to take all your previous heart medication unless your cardiologist has advised you that it is safe to stop taking any of them.

Never stop taking any of them unless your cardiologist has asked you to.

Your ICD's battery

Your ICD has a long-life battery which will usually last between 5 -10 years, dependent on the number of times it has needed to be activated to treat your arrhythmia. Your ICD device will not suddenly stop working because as the battery runs down, your clinic will keep track of this with you and 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 an ICD fitted. Patients who have already undergone the procedure have offered the following advice:

Try sleeping on your back supported by pillows, or on the opposite side to where the device was fitted. Always make sure to support yourself with enough pillows until you get into a comfortable position.

Diet

Eating a well balanced diet low in salt, cholesterol, sugar, and saturated fat is essential and will not be as boring as it sounds, if you follow the advice given in –

Booklet no: HIS5 – 'Eating for your heart' from the British Heart Foundation (BHF).

If you eat ready prepared meals, it is advisable to read the information labels on the products to help you make healthy choices.

Patient Information

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

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

Alcohol

Your consultant will have advised you about your alcohol intake. It is essential that you follow this advice, as part of your treatment plan. The usual recommended guidelines are that you should not exceed 14 units per week for a woman and a man, with 2 alcohol free days per week. However, your consultant may have suggested that you do not drink this amount.

Apart from the effects it can have on your liver, alcohol can unfavourably affect your weight and 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.

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 over the counter in pharmacies and supermarkets.

You can also join a support group.

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

You will find some useful telephone numbers at the end 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. Take care to warm up slowly, so that your heart rate has time to adjust to the change in activity.

You may find at first that you tire more easily, so stop and rest, particularly if you get breathless.

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

Other sporting activities:

You will have already stopped some of the activities that you enjoyed previously, but we must advise you it would be very unwise to participate in mountaineering/rock climbing, cliff walking, swimming or boating alone, scuba diving, or even climbing a ladder. You may receive a shock from your ICD which could seriously put you off balance.

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

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

Sex

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

Patient Information

Please reassure your partner that if your device needs to deliver a shock at this time, it will not harm them. At most they may feel a slight, harmless tingling sensation. However, don't worry that sex will trigger a rhythm disturbance, as this is a very rare occurrence.

Emotions

It is natural to feel anxious about your new device, particularly if you have previously experienced a life-threatening situation. You will have to get used to putting your trust in your new ICD and this may make you feel very vulnerable. But try to remember that your ICD **will** help your heart muscle to work more effectively and treat your abnormal heart rhythm. 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. These feelings will pass in time as you adapt to your new lifestyle. 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.

There will be some forms of employment that you will not be allowed to return to, after having had an ICD fitted. This is for your own safety and also the safety of others.

These are listed below:

- Heavy Goods Vehicle and Public Service Vehicle licence holder.
- Taxi driver
- Train Driver
- Airline pilot
- Scaffolders/roofers and similar occupations

Patient Information

If you need any advice about returning to work, your local Job Centre will have a Disablement Resettlement Officer who will advise you.

This can be a time of financial worry, so speak to someone from the Citizens Advice Bureau or Benefits Agency who will explain just what you are entitled to.

Driving

It is essential to let the DVLA know that you have had an ICD fitted and you will be expected to voluntarily return your licence until certain health criteria can be met, about which you will be informed.

As indicated above, there are some permanent exclusions from driving as part of your job. However, driving for pleasure or to get to and from work are only usually affected for a period of time. This will very much depend on your personal continuing health status.

For example, if you have had your ICD fitted as a **primary preventative measure**, then a decision about starting to drive again can usually be made after the first month.

If your ICD has been fitted in response to your heart arrhythmia problems (**secondary prevention**), then it is usual for your licence to be withheld for a period of 6 months or more, until it has been established that you are not a danger to yourself or other road users when your ICD is activated to rectify your arrhythmia.

These regulations have been drawn up by the DVLA, following advice forwarded by a national Cardiology Advisory Panel. This panel is made up of specialists in Cardiology and Cardiothoracic Surgery.

If you receive a shock from your ICD, there will be a driving restriction depending on the reason for the shock. This driving restriction is often 6 months and you do need to inform DVLA.

It is also important to let your insurance company know that you are not allowed to drive for the period of time decided.

Patient Information

Remember, if you are the only named person on a fully comprehensive policy, you may be entitled to a rebate of the money you have spent equivalent to the amount of time you are not able to drive, but it is wise to retain insurance cover for fire and theft.

Similarly, if your vehicle will be 'off the road' whilst you are not able to drive, then you should be able to claim back a proportion of your Road Tax from the DVLA, by completing form: V14.

For more information visit DVLA website www.dvla.gov.uk Or ring them on 0870 600 0301

Holidays

Having an ICD fitted does not mean that you may not go on h. 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 or problem with your ICD. Your consultant must be informed of your plans, so that he 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.

Wherever you go, remember to take your special ICD identification card with you, together with any emergency documentation you may need.

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

Patient Information

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 cardiac anti-arrhythmic drugs and drugs used to prevent malaria.

Holiday insurance

As with all long-term medical conditions, holiday insurance may be a problem for ICD 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 which will not meet your needs in the event of a medical emergency.

The Arrhythmia Alliance has a comprehensive list of insurance companies who cater for people with long term health problems. Contact them via the website www.rrhythmiaalliance.org.uk

Tel: 01789 450787

Further important information

Interference

There are many stories about how electrical interference can cause problems for ICD patients. 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.

Below is some useful information on how to avoid problems with your ICD:

Mobile telephones

These are usually safe but can affect your ICD if they are held closer than 15cms (6ins) to where your ICD 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.

Patient Information

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 close to you without any problem.

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

iPods

The same advice as above applies to iPods. Don't put them in a shirt/blouse pocket over your ICD. If you strap your iPod to your arm when you are listening to it, make sure that it is on the opposite arm to your ICD.

Magnets

The ICD is very sensitive to strong electrical magnets and will be affected if it comes into close contact (a distance of 15cms or 6 inches away), with any of the following pieces of domestic equipment:

Stereo speakers in large stereo systems, boom boxes, transistor radios.

The same applies to industrial equipment such as motors, arc welders and generators.

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 ICD, 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.

Airport security systems

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

Patient Information

Shop security systems (Electronic article surveillance)

These may interfere with your ICD. Therefore, 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 an ICD 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 ICD's implanted may not be able to have:

- MRI scans (magnetic resonance imaging)
- TENS devices used to control pain by way of electrical impulses
- Some physiotherapy treatments
- Shock-wave lithotripsy to get rid of kidney stones

This is because this equipment can cause interference with your ICD. There are some MRI safe ICD's and you should check with your cardiac physiologist if your ICD allows you to have these treatments or not.

The defibrillator can be temporarily switched off to prevent shocks during operations. There may be other circumstances where you would consider "deactivating" the defibrillator (shock) part of the device. This is done painlessly. For example, at the end of natural life, for comfort and to avoid worry of the defibrillator delivering a shock, the defibrillator function can be deactivated. This would only be done after the clinician caring for you has discussed this and agreed with you and your family. Should circumstances change, the defibrillator can easily be turned back on.

X-rays, CT scans and mammograms.

X-rays do not interfere with the function of your ICD 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 an ICD.

Patient Information

Radiotherapy

If your consultant feels that any medical condition you may have would benefit from radiotherapy, then it is important that he/she gets 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 despite all the above warnings, it is highly unlikely that anything will cause problems with your ICD.

Always involve your family, carers, and friends when you have had an ICD fitted, so that they can help you if there is an emergency and will know when to call for help.

An important note on shock therapy

If your ICD is unable to return your heart to its normal rhythm by pacing, it will deliver a shock.

If you feel well after your device has delivered a shock, this shows that the ICD has achieved a return to normal heart rhythm.

If it is the **first time you have received a shock, please let your pacing department know** as soon as possible during office hours. The staff will inform you if they wish to see you to check your ICD.

There may be an occasion when the first shock does not return the heart to its normal rhythm. In this instance a second or third shock may be necessary.

If your ICD continues to deliver shocks, it may be misinterpreting your heart failing rhythm or your heart may be failing to respond to the shock. **In this case, dial 999 and ask for an ambulance.**

You will be taken to hospital, where they will be able to determine the cause of your problem and provide the correct treatment.

Defibrillator deactivation at end of life

Heart disease can be a progressive illness that despite the best medical efforts can lead to a gradual deterioration of health in some patients and ultimately death. Likewise, other medical conditions can be diagnosed after the implantation of a defibrillator that might lead to the decline of health and commencement of end of life care.

It is important to understand at the time of the implantation of a defibrillator that the defibrillator can be switched off at any time. This would disable the function of the defibrillator to send out a shock to patients who are either dying from a cardiovascular or non-cardiovascular cause or decide for themselves that the defibrillator should be deactivated.

Patient Information

Discussions around deactivation should be held between patients and the pacemaker department or the treating consultant.

Advice for carers

The Arrhythmia Alliance is a charitable organisation, approved by the Department of Health, which produces helpful booklets on heart disease. These can be found on their website at www.arrythmiaalliance.org.uk or you may contact them by telephone on 01789 450787.

The British Heart Foundation will also be able to advise you on how to contact Heartstart UK, from where you will be able to learn how to give emergency treatment for cardiac arrest.

The important thing to remember is that if the ICD shock does not work and the patient faints and does not respond to you, dial 999 immediately for an emergency ambulance and get someone to help you if this is possible.

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

Arrhythmia Alliance

PO Box 3697 Stratford on Avon Warwickshire CV37 8YL

Tel no: 01789 450787

www.arrythmiaalliance.org.uk

Cardiac Risk in the Young (under 35's)

www.c-r-y.org.uk

British Heart Foundation

Greater London House

180 Hampstead Road, London NW1 7AW

Tel no: 020 7554 0000

Patient Information

Heart Information Line: 0300 330 3311

www.bhf.org.uk

Age UK

Free helpline 0800169 6565

www.ageuk.org.uk

University Hospital Stop Smoking Service

Telephone 024 7696 4760

Text 07825 256 881

Email: stopsmoking.services@uhcw.nhs.uk

Coventry stop smoking service

Tel no: 0300 200 0011

www.covwarkpt.nhs.uk

Smoke free Warwickshire

Tel no: 0800 085 2917

www.smokefreewarwickshire.org.uk

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 and your family after your ICD has been fitted.

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

This booklet has been written by the cardiac teams across Coventry and Warwickshire.

It has been compiled and edited by:

Peggy Coleman

Project Lead for the Coventry and Warwickshire Cardiovascular Network

Patient Information

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

The Trust operates a smoke free policy.

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