University Hospitals of Leicester
NHS Trust

Having an ICD implanted to manage your heart rhythm

Cardiac Rhythm Management

Information for Patients

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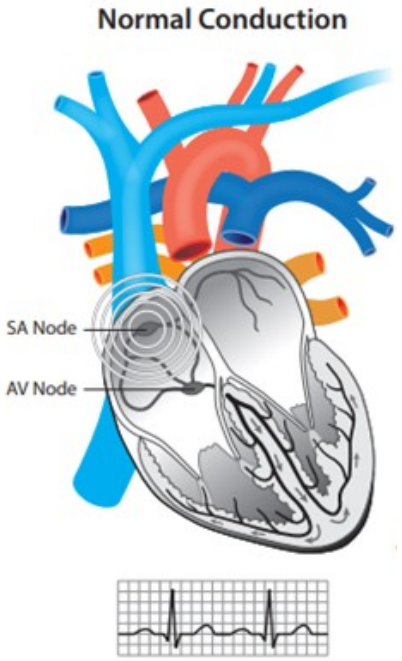
Introduction

An Implantable Cardioverter Defibrillator or ICD is a special device made up of a pulse generator and 1 or 2 leads.

It constantly monitors your heart rhythm. It can help to treat your heart if you were to develop a life threatening rhythm.

This booklet aims to help you understand why you may need this device, what happens when you come in hospital to have it put in (implanted) and after care when you go home.

How does the heart beat normally?



The heart is a pump that is responsible for moving (circulating) the blood around your body and to your brain.

The pump is driven by a electrical circuit which starts from your hearts natural pacemaker called the SA node. This sits in the right upper chamber of the heart called the right atrium.

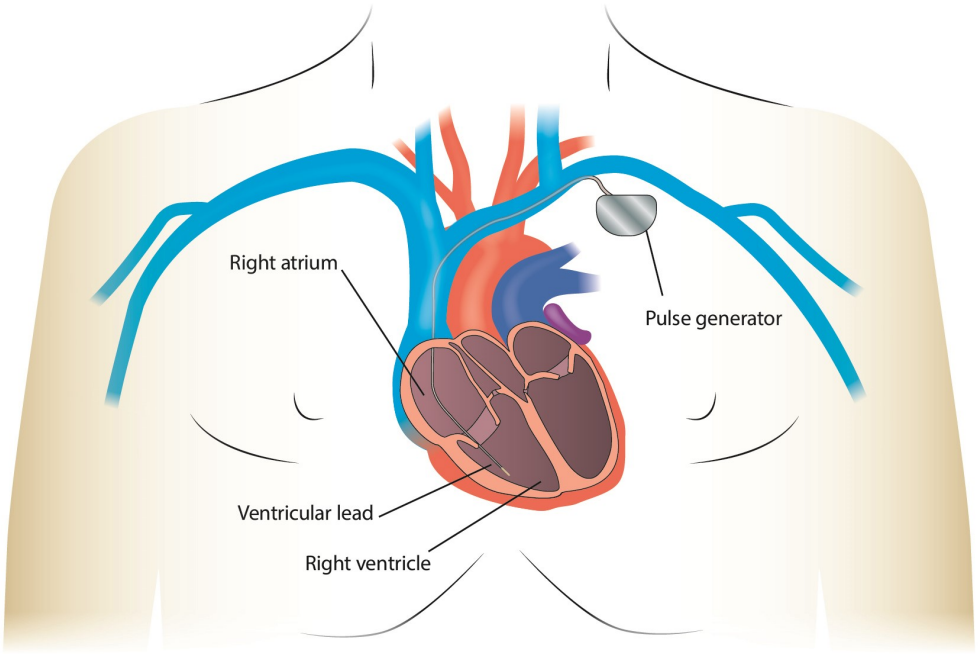
The electrical signals spread through the atria causing the muscle to contract and squeeze the blood into the bottom of the heart.

The signals are then received by the middle junction box in the heart (AV node). They are then slowed down as it passes down to the bottom chambers of the heart (ventricles) by some 'conduction pathways' called bundle branches. This causes the bottom chambers (ventricles) to contract and squeeze the blood around the body and brain from the left side or to the lungs from the right side.

What is an ICD?

An ICD is a small pulse generator (battery) placed under the skin below your collarbone. It is connected to 1 or 2 leads (wires) that are threaded along the veins to your heart.

The lead or leads of the ICD constantly monitor your heart rhythm and can deliver treatments to the heart if it goes into a very fast or life threatening rhythm.



Why might I need an ICD?

You might need an ICD if:

- You have had a very fast, abnormal heart rhythm (called ventricular tachycardia or ventricular fibrillation) before or if you are thought to be at risk of these due to your type of heart failure, or an inherited heart condition. This includes conditions like LQT Syndrome, Brugada Syndrome, or similar genetic disorders that cause an irregular heart rate.
- You may even have an ICD fitted if you have had a sudden cardiac arrest (SCA).
- You have had a heart attack or have a major disease of the heart muscle (cardiomyopathy).

These conditions can cause damage to the pumping action of the lower left chamber. They can also cause problems with the electrical pathways in the heart. This can increase your risk of having a life-threatening heart rhythm.

Your cardiologist will advise you on what is best for you.

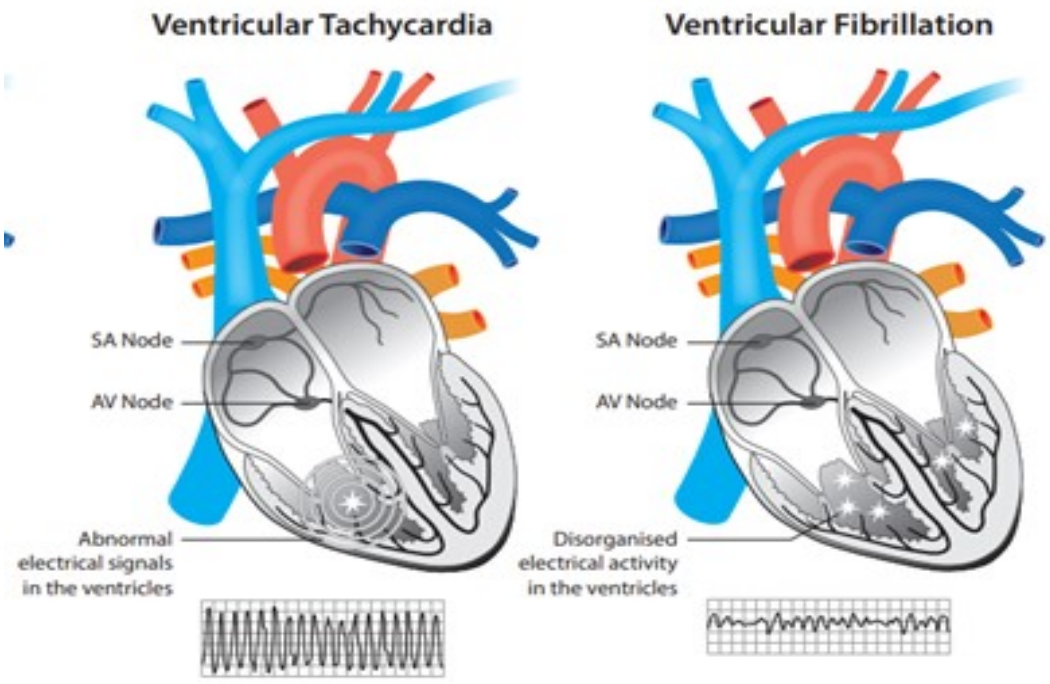
What is a fast, abnormal heart rhythm?

- **Ventricular tachycardia or VT** happens when cells in the bottom chambers of the heart (ventricles) produce electrical signals which take over the normal heart rhythm. They make the heart beat much faster than it should.

  This fast heart rhythm significantly affects how the heart pumps. You may feel your heart beating very fast, feel short of breath, dizzy, have chest pains, feel sick or collapse

  Ventricular tachycardia if not treated can worsen into ventricular fibrillation.

- **Ventricular fibrillation or VF** happens when impulses from the ventricles overwhelm the normal heart rhythm. The heart rhythm is so chaotic that the heart quivers (fibrillates) instead of pumping. This is cardiac arrest. It is fatal unless an electrical shock (defibrillation) is given to restore the heart rhythm.



Treatments that your ICD can deliver

Most modern ICDs have several main functions. Your cardiologist and cardiac physiologist will select the settings that are best for you.

- **Anti-Tachycardia Pacing (A.T.P)**

If your heart beats too fast, the device can send out faster pacing impulses. This can be done so quickly by the ICD that many people do not know it has even happened. Sometimes you may be aware of having palpitations or feeling dizzy. This therapy aims to gently correct the heart rhythm and is usually painless.

- **Electric shock (defibrillation)**

If the gentle treatment (ATP) does not correct your heartbeat, or if your device detects a very fast and dangerous rhythm called ventricular fibrillation, it can give one or more strong shocks to reset your heart. This is called defibrillation.

It may feel like a sudden hard kick or punch in your chest. It can be painful, but only for a few seconds.

If your heart is beating so fast that you pass out, you probably will not feel anything.

Your ICD is important because it helps prevent sudden cardiac arrest and can save your life if dangerous rhythms occur.

- **Pacing for slow heart rates**

If your heart rhythm is too slow, the device can send small impulses through the heart which generate extra heart beats when needed. As these impulses are very small, they are not painful and are not noticed.

Sometimes the heart can beat slowly for a few seconds after treatment for a fast heart rhythm. The device can tell when extra beats are needed and give them as needed. You may not need this function; your cardiologist and cardiac physiologist will decide this.

Deciding whether or not to have an ICD

An ICD can be lifesaving, but like any invasive procedure, there are some risks linked to it. Having an ICD implanted is a big commitment. It is important you have read and discussed all the information before you decide to go ahead.

The major benefit of an ICD is that it will constantly sense your heart’s rhythm. It will treat any life threatening rhythm disturbance.

An ICD can give some patients more “peace of mind”. They feel safer because, along with their medication, the ICD can help treat any fast rhythms that their heart may go into.

Your ICD can also treat and/or prevent a slow heart rhythm, working as a standard pacemaker.

The reason an ICD has been suggested is to prolong life and prevent “sudden cardiac death”, rather than to improve exercise capacity or quality of life.

What are the possible risks?

Around 1 in every 10 patients will have some kind of complication from the procedure. These range from common conditions which are irritating but rarely dangerous to rare events which may be serious

- **Infection:** Any procedure has a risk of infection.
    - We will give you antibiotics to reduce this before and after procedure
    - The doctor will wear a sterile gown and gloves
    - We will clean your skin will be thoroughly, but it is impossible to sterilise skin entirely.

    Fortunately, device infections are rare (about 3 in 100), but they can be very problematic. Sometimes, the device and all wires have to be removed and the whole process started again.
- **Bruising/bleeding/discomfort:** Some bleeding and bruising are normal. There is a small risk (1 in 100) of major bleeding that might need an operation to stop it. Discomfort for several days after the procedure is common. Pain relief will be available on the ward. You should carry on taking pain relief this as you need it when you get home.
- **Wire movement:** There's a small chance (6 in 100) that one of the device wires might shift out of position. This will be found during clinic checks. We will need to reposition the wire.
- **Air leak from the lung (pneumothorax):** There is a small risk (1 in 100) of air leaking from the lung into the chest during the procedure. You may need a drain and a longer hospital stay. You will have a chest X-ray before discharge to check for this.
- **Bleeding around the heart (pericardial effusion/tamponade):** This is a very small risk (1 in 200). This is a serious complication, and rarely, it can be fatal.
- **Inappropriate shocks:** The device can be confused by other fast heart rhythms that are not dangerous. Each year, around 3 to 4 people in every 100 with ICDs will get a shock they did not need. This can be distressing for the person involved but also for their family and loved ones.
- **Radiation risk:** Ionising radiation can cause cancer which happens after many years. The risk of developing cancer as a results of this procedure is less than 0.01%, which is very low. For comparison, the natural lifetime cancer incidence in the general population is about 50%.

    Depending on the complexity of the procedure there is a small chance of radiation induced erythema (skin reddening). We will tell you if you are at a greater risk of this after the procedure is finished.

Your cardiologist will have explained to you why you need to have an ICD and the benefits of having one fitted.

The risks and benefits will all be explained to you, and if you agree to go ahead, you have to sign an electronic consent form before it is implanted.

Pre-admission and preparing yourself

All patients having an ICD fitted will be seen in the Cardiac Rhythm pre-admission clinic so that you will know what to expect on the day of your procedure.

At your preadmission appointment we will give you specific information about the procedure, your medication and when to stop eating and drinking.

Please remember to bring the following to your preadmission appointment:

- Your current medication or recent prescription
- Your record of INR blood tests if you take warfarin

If you have been given a preadmission date which is less than 7 days before your procedure please contact the Cardiac Rhythm Team on 0116 258 3848 for advice on your medication.

At your pre-admission appointment we will give you antimicrobial wash and nasal cream. Please use these as instructed for the **3** days before and on the day of your procedure.

Eating and drinking (fasting)

- **If your admission time is 8 am:** Do not eat anything from midnight the night before. You can have water only until the time of the procedure.
- **If your admission time is 1 pm:** Do not eat anything from 9 am on the day of the procedure. You can have water only until the time of the procedure.
- **If you are having a general anaesthetic, and your admission time is 8 am:** Do not eat anything from midnight the night before. You can have water only up to 2 hours before your procedure.
- **If you are having a general anaesthetic, and your admission time is 1 pm:** Do not eat anything from 8 am. You can have water only up to 2 hours before your procedure.

You will be admitted to ward 32. Please bring a small overnight bag with you and all of your medication. If you are on warfarin, please bring your anticoagulation booklet and readings.

What does the procedure involve?

The procedure usually happens under a local anaesthetic. You may also be given some sedation to help you feel relaxed.

On ward 32:

- When you arrive on ward 32 you will meet the nurse who will be caring for you. They will show you to your bed.
- The nurse will ask you some questions. They will take your blood pressure, pulse and temperature. They will put a small plastic tube (cannula) the back of your hand.
- They will give you an antibiotic through the cannula. The antibiotics are given to reduce the

risk of developing an infection in the ICD site. **Please tell the nurse if you have had any allergic reactions to antibiotics.**

- You will change into a hospital gown and paper pants
- If you have hairs on your chest the nurse will need to remove these with clippers, to keep infection risk low.
- A member of staff from the procedure room will come and introduce themselves. They will take you to the room in a wheelchair or on your bed.

In the procedure room also called Cath Lab:

- The ICD implant happens in a special procedure room often called the Cath Lab. It is separate from the ward. This room has X-ray and monitoring equipment.
- The staff in the procedure room will be wearing special gowns, masks, and hats to help protect against infection, as this is a very clean procedure.
- You will be moved from your bed onto the X-ray table, which is narrow and quite firm. Wires for a heart monitor will be attached to your arms and legs, along with other necessary monitoring equipment.
- Your upper chest area will be cleaned with an antiseptic solution. Sterile towels will be used to cover the surrounding area. The doctor will inject local anaesthetic into the skin below your collarbone (usually on the left side). This may sting a little. It will numb the area before a small cut (incision) is made.
- A small space (pocket) is then created under your skin that is on top of the chest muscle for the ICD device to fit into. X-rays are used to help the doctor guide the wires under your skin and along one of your veins into your heart. Wires are typically placed into the right side of your heart – one in the top chamber and one in the bottom chamber.
- Before connecting the wires to the ICD device box, they are carefully checked to make sure they can sense electrical signals from your heart and work correctly. The device settings are then adjusted to suit your specific needs.
- Once all the wires are in position and checked, they are connected to the ICD device box. The box is then carefully fitted into the space that was made earlier in the procedure.
- The whole procedure usually lasts between 1 to 2 hours.
- You may have some discomfort and feel pushing or pulling around your chest, but you should not feel pain.
- The cut will be closed with waterproof surgical glue or dissolvable stitches. It may be covered with a protective dressing.
- Your ICD will be checked by a member of the Pacing Clinic before you leave the Cath Lab. You will also get an appointment card for your first device check, which will be in 4 to 6 weeks.

After the procedure:

- After the procedure, you will be taken back to the ward on your bed. You will need to stay on bed rest for 2 hours.
- If you had sedation, you might be a little sleepy, but once awake, you will be able to eat and drink normally.
- The area where your device has been implanted may be slightly bruised and swollen. It's normal to feel some discomfort as the local anaesthetic wears off. Please tell the nursing staff. They will offer you pain relief.
- The nursing staff will then encourage you to get up and start moving around.
- Before you go home, you will have a chest X-ray.
- Any changes to medications will be made before you leave and explained to you.
- We will tell you if any stitches need to be removed by your GP/Practice nurse, This does not tend to be needed.

Living with your ICD

- Most people quickly adjust to having an ICD, you may be aware of it at first.
- It's normal to feel some discomfort when lying in certain positions or wearing specific clothes, but this will not damage the device.
- You will not feel the pacemaker actively working.
- Regular follow-up checks at your device clinic help staff detect any potential issues.

Limiting your arm movements

- You will be advised to limit arm movements on the side where your device was implanted for 4 weeks.
- Do not lift that arm above shoulder height. Be careful not to put too much pressure on it.
- Avoid heavy lifting e.g. carrying shopping bags, moving heavy objects
- This helps the wires to settle securely into your heart tissue.
- You can do some gentle shoulder movement to prevent stiffness.

Battery

- The battery life of your device is typically 7 to 10 years. It is checked at every pacing clinic visit.
- When the battery needs replacing, the entire device box is replaced with a new unit, usually leaving the original wires in place.

What to do if your ICD delivers a shock

- You may have some warning that your ICD is about to deliver a shock, such as feeling palpitations, or feeling light-headed or dizzy, and be able to ask for help if possible and sit or lie down on the ground. However, this may happen so quickly that you have no warning at all.
- Afterwards, you should recover quite quickly.
- Even if you feel well after the shock, you should still contact the Pacemaker Clinic via their phone number (see last page) as soon as you can to arrange a device check.
- If you feel unwell or if your device has given you several shocks in any 24 hour period, dial 999 for an ambulance.
- Your ICD will be checked to find out why the shock was given.
- After a while, we might not need to check the device after each shock, unless you feel unwell. The pacing clinic will tell you if this is the case.
- It is very important to keep your ICD card with you at all times so that the make, model, and settings of the device can be known straight away.
- If someone is with you when you have the shock, they will probably notice you jolt. No harm will come to anyone who is touching you.
- Indeed, it can be very comforting and reassuring to have someone put their arm around you as you have a shock.
- There are typically restrictions to driving after a shock or ATP.
- The restrictions are dependent on if the treatment was appropriate or not and if alterations to treatment or programming can reduce the likelihood of the shock happening again.
- The pacemaker clinic will be able to give you more information, as will the DVLA website www.gov.uk/health-conditions-and-driving.

ICD clinic visits

- Your ICD should be checked regularly.
- You may need visits more often just after it is fitted.
- During each clinic visit, the physiologist will check your ICD using a special programmer. This machine lets them check settings and the battery life of your device. All the information is saved on a computer. It is confidentially stored in your records.
- They will check your wound. You may have other tests done, such as an ECG.
- Please also take this chance to ask any questions or let the team know if you have any problems or worries.
- You may also see the cardiologist or their registrar at your clinic visit.

Remote monitoring

- Many centers can set you up for ‘remote’ monitoring. This means monitoring your heart and implanted device while you are at home – remote from the hospital.
- You need a special transmitter, and using an integrated aerial, the device automatically sends medical and technical information from your heart to your doctor and the cardiac physiologists that are treating you.
- Some newer ICDs can connect to your smartphone instead.
- This lets your doctor monitor your condition based on accurate, up-to-date clinical information at any time. This means that should you get a shock and you are feeling well, the care team will be able to check your device and the cause of the shock while you stay at home.
- Remote monitoring can also replace some routine clinic visits, saving you time.

For more information, please see the Arrhythmia Alliance patient information booklet on Remote Monitoring

Pain relief

- You may have some pain and discomfort after the procedure.
- Take regular painkillers for a few days as needed. Seek advice from your GP or pharmacist if pain lasts more than a few days.

Wound care

- If your wound has stitches and a dressing, remove the dressing 48 hours after your procedure.
- Do not replace it if the wound is dry.
- You can shower the wound site but avoid soaps or perfumed products for the first 2 weeks. They may irritate the wound.
- If surgical glue was used, you will not have a dressing. It is waterproof after 24 hours. Again, avoid soap or perfumed products for the first 2 weeks.
- Look for signs of infection:
    - redness
    - on-going soreness or swelling
    - oozing
    - surrounding skin becoming hot, or developing a higher than normal temperature or feeling unwell.
- If you notice any of these signs, contact your GP right away, as infection could spread to the device. You may need it removing and a replacement implanting on the other side of your chest.

Driving and insurance

- The Driving and Vehicle Licensing Agency (DVLA) has strict guidelines for patients who need an ICD and whether or not they are safe to drive. There will be some limits, but these will vary. It will depend on why you have had your ICD fitted.
- It is very important that you discuss this with your nurse, physiologist, or doctor at your ICD centre. They will explain this in more detail. You can access the guidelines on the DVLA website.
- You will also need to tell your motor insurance company to let them know that you have had an ICD fitted.
- If you hold a Group 2 (lorry/bus) licence, having a defibrillator would disqualify you from holding such a licence.

Travel

- These devices rarely cause problems with airport security systems.
- When traveling, always carry your 'Device Identification Card'. You will get this before discharge.
- Move quickly through the security arch if asked. If a hand search is needed, make sure the metal detector is not placed directly over your device.
- It is advised to show security staff your identification card and ask to be searched by hand, as hand-held wands can temporarily interfere with your device. Only walk through the metal detector archway if asked to do so, but be aware the metal casing may set off the alarm. The detector will not harm your device if you walk briskly through.
- Make sure your travel insurance company is aware you have an ICD. Some need written confirmation from your cardiologist that you are fit to travel. Travel companies raise premiums. It is suggested to shop around.

Mobile Phones/Portable Music Players

- You can use these safely, but keep them at least 15cm (6 inches) away from your device.
- Always use your phone on the ear on the opposite side to your device, and do not put the phone in a shirt pocket over the ICD site.
- Some studies show mobile phones and portable music players can affect the device if held within 15cm (6 inches) .

Magnets

- Do not carry magnets or place them over your chest as they can temporarily stop therapies.
- Avoid carrying stereo or hi-fi speakers. They have strong magnets that can interfere with your device.

Electrical equipment

- Most household electrical items like well-maintained microwave ovens, DVD players, and electric drills are safe if used at least 15cm (6 inches) from your device.
- If your job involves equipment such as welding tools, please seek specific advice as this may not be recommended.
- Avoid leaning over a car alternator with the engine running.

Arc welding

- This should be avoided.

Shop doorway security systems

- There is a very small risk of interference. Walk through these at a normal pace. Do not linger.

Medical and dental tests/treatments

- Always tell medical and dental staff that you have an ICD.
- Take your ID card with you to the hospital.
- You can have an MRI scan with an ICD but some precautions need to be taken by the pacemaker team and the MRI department.
- X-rays, CT scans, and mammograms are generally safe.
- Some electrical nerve and muscle stimulators (TENS units) may cause interference depending on where they are applied. Talk to the pacing clinic if this treatment is suggested.
- If you need an operation, tell your surgeon and the anaesthetist that you have an ICD device. Sometimes, the device's shock function needs to be turned off during the operation to stop it from giving unnecessary shocks. This is usually done with a special programmer or a magnet, especially if equipment used to used to stop bleeding (diathermy) is used.

Physical activity

- It is generally safe to exercise, but what's best for you depends on your heart condition and the type of exercise.
- Heart rhythm problems during exercise are rare. If they happen, it's usually because of your heart condition, not because of the ICD.
- The risk is higher if you have severe heart damage from a heart attack or a heart muscle disease (cardiomyopathy).
- Moderate aerobic exercise is usually no riskier than resting.
- Some exercise habits can increase risk:

- Starting intense exercise suddenly without warming up.
- Stopping exercise abruptly without cooling down or active recovery.

- In cardiac rehab programmes, where warm-up and cool-down are included, rhythm problems are very uncommon.
- After your initial recovery (about 4 to 6 weeks), try to slowly increase your activity level if possible.
- You may be offered cardiac rehab or an exercise test to help you regain confidence and return to normal activity.

How might exercise affect my ICD?

- Your ICD detects abnormal heart rhythms in a number of ways, one of which relates to the speed of the heart during the heart rhythm problem.
- Most rhythms treated with ICDs will be a lot faster than your normal heart rate would reach, even with strenuous exercise.
- Sometimes, however, the ICD needs to be programmed to recognise abnormal heart rates that are close to those that you get with exercise. For this reason, it is worthwhile checking how your ICD is programmed before doling anything other than recreational exercise or exercise to lose weight. Your cardiologist, arrhythmia nurse, or cardiac physiologist can advise you about how high you can safely raise your heart rate.
- If you are concerned, you may also be referred to an exercise specialist within the Cardiac Rhythm Team if you live in Leicester; Leicestershire or Rutland and to a local Cardiac Rehabilitation Team if you are outside of these areas.
- If you would like to know how your ICD has been set up, your cardiac physiologist/nurse can give you this information.

Is there any exercise I definitely cannot do?

- If you are anxious about taking exercise, it may be an idea to have someone with you at first,. The aim is for you to be able to exercise independently with confidence.
- It is advisable to carry your ICD card with you at all times, in case you need to be taken to hospital for any reason.
- You should avoid taking part in any contact sport and/or any competitive high-intensity sports.
- You should always contact your device clinic before starting any sport/activities that you wish to take part in. They will be able to discuss any potential risks with you on a personal basis.
- Although the ICD itself is very tough, bruising or breaking the skin over the site where the device is implanted may lead to infection,. This can be difficult to treat and resolve.
- You should also recognise that you are unlikely to get insurance for winter sports such as skiing or, indeed any other ‘extreme’ sports where the effects of a shock may put you or

others at risk. This may be possible in some special cases, particularly in those patients who have had an ICD implanted for 'just in case' reasons.

- You can swim once your implant wound has healed fully. Do not swim alone in a private pool. Some ICDs are implanted for heart rhythm problems which may be triggered specifically by swimming (some Long QT Syndromes – check with your cardiologist), Snorkeling is not recommended, and you must not SCUBA dive.
- You should only do water sports if you are with at least one other person at all times. They will need to be able to get you out of the water in case your ICD delivers a shock.
- You will not be able to take part in any form of competitive motor sport, as you will not be eligible for an appropriate licence.

You should also avoid any sport (or indeed any situation) where you might be exposed to strong magnetic or electrical fields, or a powerful radio source. For example, radio-controlled planes, cars, boats, etc. may be a problem.

So, what can I do?

- Your heart condition (the reason you have an ICD) affects your ability to exercise more than the device itself. You may feel:
    - Shortness of breath
    - Tiredness (fatigue)
    - Chest pain
- Do not ignore these symptoms. Stop exercising and seek advice if they occur.
- Exercise is good for you. Focus on:
    - Aerobic exercise (walking, cycling)
    - Easy and natural movements
    - Strength and flexibility
- These activities are safe, effective, and help with daily life.

How to exercise safely

- Start slowly and increase the pace of the activity slowly.
- Use a standard way to monitor effort: Heart rate or how hard it feels (perceived effort).

Aim for moderate intensity:

- About 60 to 75% of your target heart rate (220 minus your age).
- If you take beta-blockers, aim for 30 to 40 beats above your resting heart rate.

Or use the effort scale:

- 0 = sitting, 10 = hardest effort.
- Keep effort below 5 (moderate).
- Avoid getting too breathless – this can strain your heart.

Tips for each session

- Warm-up for 10 minutes.
- Cool-down for 10 minutes.
- Main workout: 25 to 30 minutes of graded aerobic circuit training. Include multi-joint movements with moderate resistance.
- Mix exercises: Arms → trunk → legs.
- Flexibility and coordination after harder exercises.

What to avoid

- Static exercises (holding tight or holding your breath). These are dangerous and have no health benefit.
- Most exercises should be standing.
- Limit lying down or seated arm exercises.

Seated arm exercises

- Lifting weights while seated can put extra strain on your heart and increase the risk of rhythm problems.
- If you do seated exercises:
    - Keep the intensity low.
    - Focus on muscular endurance (lots of repetitions without getting very tired).

Add gentle leg movements (like heel lifts) during seated arm work to reduce heart strain.

Keeping fit

Fitness declines quickly if you stop exercising.

Aim for:

- Moderate physical activity most days.
- Continuous activity for 30 minutes or more is best.
- Or split into 2 to 3 sessions of 10 to 15 minutes in a day.

Wire safety after implant

- Some patients may have a small risk of ICD wire problems.
- If this applies to you, your implant team will tell you right after surgery.
- Normally:
  - Limit exercise for 4 to 6 weeks after implant.
  - After your first clinic follow-up, you can usually return to normal activity.

Avoid strain on wires

- Vigorous, repetitive shoulder movements (like heavy weightlifting) can stress the wires.
- Safer options:
  - Light to moderate strength exercises.
  - Movements that match everyday activities.

Having sex

- It is very common to be reluctant to resume sexual activity. However, the device will not cause any harm to your partner, even if a shock is delivered to you during sex.

Automated external defibrillators (AEDs)

- It is safe to use an automated external defibrillator (AED) on someone who has an ICD.
- It is important not to place the pads in contact with, or directly over, the device. The pads are usually placed on the upper right of the chest and on the left side of the rib cage, so a device should not get in the way. If someone has an implanted device, you will notice a scar and a bump. Place the pad to the side of the device (about 3cm).
- The shock produced could affect the functioning of the ICD, but, the benefits of using the AED to save someone's life outweigh this potential risk.
- If you receive CPR or defibrillation, you should have your device checked afterwards to ensure the settings are still accurate.

If you have any questions or concerns, please contact your cardiologist, the Cardiac Rhythm Management Team or Pacing Clinic

Planning to deactivate ICD shocks

- People with heart problems who have got an ICD may later be diagnosed with progressive heart disease or other life-limiting illness. It may well come to a stage where cardiopulmonary resuscitation is unlikely to be helpful or you no longer want it.
- In this case, it is often appropriate to deactivate ICD shocks. This is to avoid the situation where a person who is dying for another reason receives shocks which are unpleasant but will not save their life.
- These conversations can be difficult and emotional, but it is important to discuss these issues early. Ideally, these discussions should take place while you are still able to make your own decisions, but in some cases, the next-of-kin may need to be involved.
- Switching off shock therapies is straightforward but is not always available out-of-hours. An ICD physician or a physiologist has to reprogram the device.

The following points are important:

- The device will no longer provide shock therapy in the event of fast abnormal heart rhythms.
- Turning off shocks will not in itself cause death.
- Turning off shocks will not be painful, nor will the failure to shock cause pain.
- The decision is not irreversible. We can turn shocks back on if the situation changes.
- The device will continue to provide pacemaker functioning to prevent slow heart rhythms (these are small impulses that are not painful).
- There will be a plan to make sure healthcare professionals are available to answer questions or concerns that may arise.
- A deactivation request form will need to be filled in, with the involvement of the ICD physician.
- The palliative care team may be helpful where difficult decisions need to be made.

Contact details

If you have any questions or concerns about your pacemaker or aftercare, please contact:

- **Pacing Clinic:** Monday to Friday, 9am to 4.30pm, call: **0116 258 3837** (excluding Bank holidays / answer phone available out of hours)
- **Cardiac Rhythm Nurses:** Monday to Friday, 8am to 5.00pm, call: **0116 258 3848** (excluding Bank holidays / answer phone available out of hours)

Please note these numbers are not an emergency number. Depending on your symptoms please contact your GP or 111. For medical emergencies call 999.

More information

Heart Rhythm Charity – Arrhythmia Alliance

Email: info@heartrhythmalliance.org Tel: 01789 867501

British Heart Foundation

Website: bhf.org.uk Tel: 0300 330 3311

DVLA

Online: www.gov.uk/health-conditions-and-driving.

Tel: 0300 790 6806 (car drivers/motorcyclists)

0300 7906807 (lorry/bus drivers)

اگر آپ کو یہ معلومات کسی اور زبان میں درکار ہیں، تو براہِ کرم مندرجہ ذیل نمبر پر ٹیلی فون کریں۔

على هذه المعلومات بلغةٍ أخرى، الرجاء الاتصال على رقم الهاتف الذي يظهر في الأسفل

જો તમને અન્ય ભાષામાં આ માહિતી જોઈતી હોય, તો નીચે આપેલ નંબર પર કૃપા કરી ટેલિફોન કરો

ਜੇ ਤੁਸੀਂ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੁੰਦੇ ਹੋ, ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਹੇਠਾਂ ਦਿੱਤੇ ਗਏ ਨੰਬਰ 'ਤੇ ਟੈਲੀਫੋਨ ਕਰੋ।

Aby uzyskać informacje w innym języku, proszę zadzwonić pod podany niżej numer telefonu

If you would like this information in another language or format such as EasyRead or Braille, please telephone 0116 250 2959 or email uhl-tr.equalitymailbox@nhs.net

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