Patient Information Leaflet

York and Scarborough Teaching Hospitals NHS Foundation Trust

Implantable Cardioverter Defibrillator (ICD)

Information for patients, relatives and carers

ⓘ For more information, please contact:

Vascular Imaging Unit
Telephone: 01904 726065
Monday – Friday 08:00 – 17:00

Pacemaker Clinic
Telephone: 01904 726525
Monday – Friday 09:00 – 17:00

Or email us at: yhs-tr.yorkcardiacdevices@nhs.net

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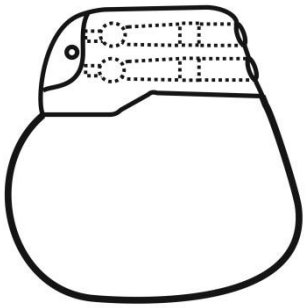
What is an implantable cardioverter defibrillator (ICD)?

ICD stands for implantable cardioverter defibrillator; often called an ICD or defibrillator. It is made up of an electronic device containing a battery and electronic circuitry and is connected to one or more wires known as leads.

An example of and ICD



ICDs can recognise and monitor your heart rhythm and can treat abnormal heart rhythms if needed.

Why might I need an ICD?

Your cardiologist will advise you. However, if the doctor has suggested that you need a defibrillator you may have experienced or are at risk of experiencing an abnormal, fast heart rhythm. This can cause you to become unwell, unconscious, or your heart to stop beating and be due to:

- If you have previously had ventricular tachycardia or ventricular fibrillation or are at risk of this due to heart failure or other inherited heart conditions.

- If you have had a heart attack – this can cause damage to the pumping function of the ventricles or the electrical pathways in the heart.

How the heart works normally

The heart is a muscle, that pumps blood and oxygen around your body to all your vital organs. It has four chambers, two at the top (the right and left atria) and two at the bottom (the right and left ventricles). The heart also has an electrical system, which sends impulses (beats), through the heart causing it to contract and pump blood around the body.

Each normal heartbeat begins in the natural pacemaker of the heart (the sino-atrial or SA node) which lies at the top of the right atrium. It travels across the two top chambers and down through a small junction (the atrioventricular or AV node) between the upper and lower chambers. It then spreads across the bottom chambers (ventricles) causing the heart to contract and pump blood to the lungs via the right ventricle and oxygenated blood around the body via the left ventricle.

Sometimes the electrical system in your heart does not work as well as it should, causing your heart to beat too quickly or too slowly. A defibrillator can stop fast heart rhythms that start in the ventricles. This fast heart rhythm is called ventricular tachycardia or VT.

Some people can have an even faster, irregular heart rhythm called ventricular fibrillation or VF. This is life-threatening if not treated quickly with an electric shock delivered to the heart.

You will need to have some tests before the decision to have an ICD fitted is made, such as an electrocardiogram, an echocardiogram, blood tests, and maybe a few others. Your cardiologist will advise as to what is needed.

What can the ICD do?

Most modern ICDs have three main functions; however, you may not need to have all of them. Your cardiologist or cardiac physiologist/scientist will select settings that are best for you using current national guidelines for ICD devices.

- If your heart rhythm is too slow, the device can work as a pacemaker. This is called bradycardia pacing.

- If your heart beats too fast, the ICD can give you a burst of extra beats at an even faster rate which will possibly return your heart back to a normal rhythm. This is called anti-tachycardia pacing (ATP).

- If the anti-tachycardia pacing does not bring your heart back to a normal rhythm, or if the ICD senses a faster rhythm called ventricular fibrillation, the ICD can then give one or more high energy shocks.
  This is called defibrillation.

How is the ICD implanted?

You will arrive at the Vascular Imaging Department at an agreed time or if already in hospital, a ward nurse and a porter will take you to the procedure room. Once there, another nurse will check your details again and you will be asked to lie on a trolley or narrow operating table. The procedure is mostly performed under a local anaesthetic, but it is can also be performed with sedation if required which will make you relaxed and sleepy. There will be a nurse in the room throughout the procedure to keep an eye on your observations.

Before the ICD implant procedure starts, the doctor will inject some local anaesthetic under the skin just below your collarbone (usually the left side). This will numb the area and allow the doctor to pass a small lead or electrode through a vein into your heart.

You may have one, two or three leads inserted depending on what your doctor recommends. The leads are then connected to the pulse generator box, which is about the size of a large matchbox which will be placed under the skin.

What happens after the ICD is implanted?

After the procedure you will undergo some checks outside in recovery or back on the ward. It is important to let the nurse know immediately if you experience any pain at all. It is normal for the wound to be sore or bruised for a few days so you may be given some regular painkillers. You will also be given some antibiotics before the procedure.

There is a small risk the leads into the heart can move out of position. To minimise this risk, you should not lift the arm or perform vigorous movements on the side the ICD is implanted. This is for at least six weeks after the procedure. After this time, you will be able to return to normal activity providing the wound is healed and the device is functioning appropriately. If you are unsure, it is important to check with your cardiologist, nurse or cardiac physiologist after the procedure.

The cardiac physiologist/scientist will come and see you after the procedure to check the device before you go home. This involves using a special programmer to communicate with the device and usually takes around 20 minutes.

You will be given an ICD identity card before you leave hospital, or it will be sent out in the post. At this time, you can ask any questions you may have about the device.

- If you have the procedure done as an outpatient or day case, you will likely go home the same day unless there are any complications, or the procedure finishes late in the day.

- If you have the procedure done whilst already being in hospital, you may stay in overnight so extra checks may be carried out.

If you do go home the same day, the cardiac physiologist will arrange an appointment for you to come back the next day, to have the device checked again. If you are unable to travel to an appointment the next day, an appointment may be performed through your home monitor -see ‘Clinic visits / remote monitoring’ on page 7.

How do I care for my wound site?

Your wound site should take approximately six weeks to heal fully. It is important to:

- Keep the dressing on until the stitches, clips or steri-strips are removed.
- If the dressing becomes soiled or wet, wash your hands thoroughly, remove the existing dressing and replace with one of the new dressings given to you. **Do not touch the wound site.**
- You may notice some bruising; if the bruising is soft, this is normal. If the bruising is hard or the wound site starts to swell, or bleed or ooze apply firm pressure to the area and return to hospital.
- Avoid taking hot baths so take a cool bath or shower for a few days. It is important to keep the wound clean and dry.

You will need to make an appointment with your GP practice seven to ten days after your procedure to have the closure material removed. If you:

- develop a fever.
- the wound site is red or warm to touch.
- or you have any concerns regarding the wound site.

Please contact the Pacemaker Clinic on 01904 726525 (York Hospital) - if out of hours, please contact your GP.

What about my medication?

Do not stop taking any prescribed medication unless your doctor instructs you. If you are taking warfarin, rivaroxaban, dabigatran or edoxaban, please ask the nurse or doctor before discharge when you should recommence taking your medication.

Going home

- On discharge, we advise you to take plenty of rest over the following couple of days. Gradually build up your activities to your normal level.
- Avoid extending your arm or shoulder for the first six weeks, so no reaching, lifting, and stretching.
- Avoid rough contact that could result in blows to the implant site.
- Avoid rubbing the wound site or the surrounding chest site.
- Avoid lifting heavy objects, pushing, pulling, mowing the lawn, or hoovering until instructed by the ICD clinic.

Living with an ICD

What if I feel therapy from the ICD?

The device will be programmed to the best settings for you by the cardiologist and cardiac physiologist/scientist based on current national guidelines. This can be changed during follow-up appointments if necessary.

Anti-Tachycardia Pacing (ATP)

If your heart beats too fast, the device will deliver faster pulses to help get the heart back to a normal rhythm. This can be done quickly by the ICD and many people are unaware of it happening. For some people it may feel like palpitations.

If ATP does not correct the fast heart rhythm, your device will deliver a shock.

Shocks

You may have some warning that your ICD is about to deliver a shock, such as palpitations, light-headedness or dizziness. However, this may happen so quickly you have no warning at all.

Afterwards you should recover quite quickly. If you feel well after the shock, you should contact the Pacemaker/ICD clinic as soon as possible during the working hours listed on the front page.

If this occurs at night or over the weekend and you remain well, please contact the ICD clinic the next working day.

If you feel unwell or your ICD has given multiple shocks, dial 999 for an ambulance to come straight to hospital. Your ICD will be checked to find out why the shock was given.

It is extremely important to keep your ICD identity card with you at all times in the event of the above happening. This makes sure your ICD model can be known straight away.

ICD Alarms

Some ICD devices have alarms as a safety feature for various events detected by the device. If you hear these alarm tones, it is important to contact the Pacemaker/ICD Clinic.

When can I return to work?

We advise you not to return to manual work for seven to ten days, but you may return earlier for sedentary occupations such as desk jobs.

Can I use my mobile phone?

You may still use your mobile phone as long as it is **not** carried over the ICD, such as in the left chest pocket. We also advise you to use the ear on the opposite side of the ICD site when on the phone. Some iPhone models have a ring magnet on the back. It is especially important to keep this type of iPhone away from your ICD.

You must maintain a distance of 15 centimetres (6 inches) away from your device.

What about driving?

The Driving and Vehicle Licensing Agency (DVLA) have strict guidelines in relation to patients that have an ICD implanted. There will be some restrictions to driving but they vary depending on why you have had your ICD fitted. It is important to discuss this with your cardiologist or cardiac physiologist/scientist.

You can access the guidelines on the DVLA website and will also need to inform your motor insurance company to let them know you have an ICD fitted.

Clinic visits / remote monitoring

If the procedure was done as an outpatient or day case, you will come back to the ICD clinic the next day for a further check. This will be arranged with the cardiac physiologist/scientist when they see you after the implant procedure.

At the next day clinic appointment, the cardiac physiologist/scientist will check the device using a special programmer. This allows them to check the settings on the device, the ICD battery and test the lead(s) to ensure it is functioning appropriately. You will also be given a remote monitor which allows the Pacemaker/ICD clinic to check your device from home. It uses a small device plugged in in the bedroom that sends the information securely using an integrated aerial.

If you are unable to visit the ICD clinic the next day, you may be given a remote monitor before being discharged from hospital which will send information to the ICD clinic the following day instead. This will be discussed with the cardiologist before you go home.

You will have an appointment in the ICD clinic six weeks after the implant. This allows the ICD and leads to settle into the heart muscle and become more stable. The clinic will then check your ICD every six months; this will alternate between an in person visit to the ICD clinic, and at home using the remote monitor.

The remote monitor is also constantly sending information to the ICD clinic should any problems arise, allowing the cardiac physiologist/scientist to monitor you with up-to-date clinical information.

This also includes if you receive any ATP, or shocks as outlined above. It is still important to contact the ICD clinic if you think you may have received therapy from your device.

If you have any questions regarding your clinic visits or remote monitoring, please discuss it with the Pacemaker/ICD clinic during your visit, or via telephone.

Exercising

You should restrict your exercise and movement for six weeks post-implant. After your first follow up appointment, you should be able to resume normal activity levels. This is mainly to minimise the risk of the leads moving out of position.

It is more likely that your underlying heart condition will have more influence on your ability to exercise than the ICD itself. This can be due to shortness of breath, fatigue or chest pain and should not be ignored.

Research has shown that physical activity is hugely beneficial for people with an ICD; however, this should be progressed slowly from the first follow up after implant, usually six weeks. If you are not sure what you can and cannot do, discuss this with the Pacemaker/ICD clinic at your follow up appointments.

What electrical equipment can I use?

Most electrical appliances at home will be safe to use providing they are in good working order. This includes:

- Televisions, radios, CD and DVD players.
- Hairdryers, shavers.
- Washing machines, fridges, hoovers, ovens and microwaves.
- Office equipment such as computers, telephones and printers.
- Remote controls.

There is some equipment which is **not** advisable to use when you have an ICD implanted. This is usually due to strong electromagnetic fields or vibrations from the equipment. This will not typically damage the ICD but will interfere with normal function when in contact with it. This includes:

- Arc and MIG welders.
- Heavy drilling equipment.
- Discharging of firearms.
- Induction hobs.

If you still need to use this equipment, or some electronic equipment is not listed above, speak to your cardiologist or cardiac physiologist/scientist for advice before using this equipment. Our clinic number is on the front page of this booklet.

Further Information

Magnets

Do not carry magnets or place a magnet over the device site and keep them six feet away from your device where possible. Magnets can temporarily interfere with your ICD when in contact with it and subsequently change the function. This will go back to normal once you remove any contact with a magnet.

Travel

You can safely travel abroad with your ICD, but it is advised to show the security staff your ICD identification card. You may then be searched by hand as hand-held wands can interfere with your ICD. You may walk through metal detector archways briskly, but due to the metal casing of the device, it will cause the detector to alarm.

It is important to let your travel insurance company know that you have an ICD, but this may increase your insurance premium. The British Heart Foundation website has a list of friendly insurance companies for people with an ICD.

Other medical procedures

If you require any other medical procedures or operations, it is important to let the medical professional looking after you know you have an ICD beforehand. This is because technical support may be required before and after the procedure to ensure the ICD is functioning appropriately.
Please ensure you have your ICD identification card with you whenever you go to hospital.

Tell us what you think of this leaflet

We hope that you found this leaflet helpful. If you would like to tell us what you think, please contact: Vascular Imaging Unit, York Hospital Wigginton Road, York, YO31 8HE, telephone 01904 726065 or email us at yhs-tr.yorkcardiacdevices@nhs.net.

Patient Advice and Liaison Service (PALS)

PALS offers impartial advice and assistance to patients, their relatives, friends and carers. We can listen to feedback (positive or negative), answer questions and help resolve any concerns about Trust services.

PALS can be contacted on 01904 726262, or email yhs-tr.patientexperienceteam@nhs.net

An answer phone is available out of hours.

Teaching, training and research

Our Trust is committed to teaching, training and research to support the development of health and healthcare in our community. Healthcare students may observe consultations for this purpose. You can opt out if you do not want students to observe. We may also ask you if you would like to be involved in our research.

Leaflets in alternative languages or formats

If you would like this information in a different format, including braille or easy read, or translated into a different language, please speak to a member of staff in the ward or department providing your care.

Patient Information Leaflets can be accessed via the Trust's Patient Information Leaflet website: www.yorkhospitals.nhs.uk/your-visit/patient-information-leaflets/

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