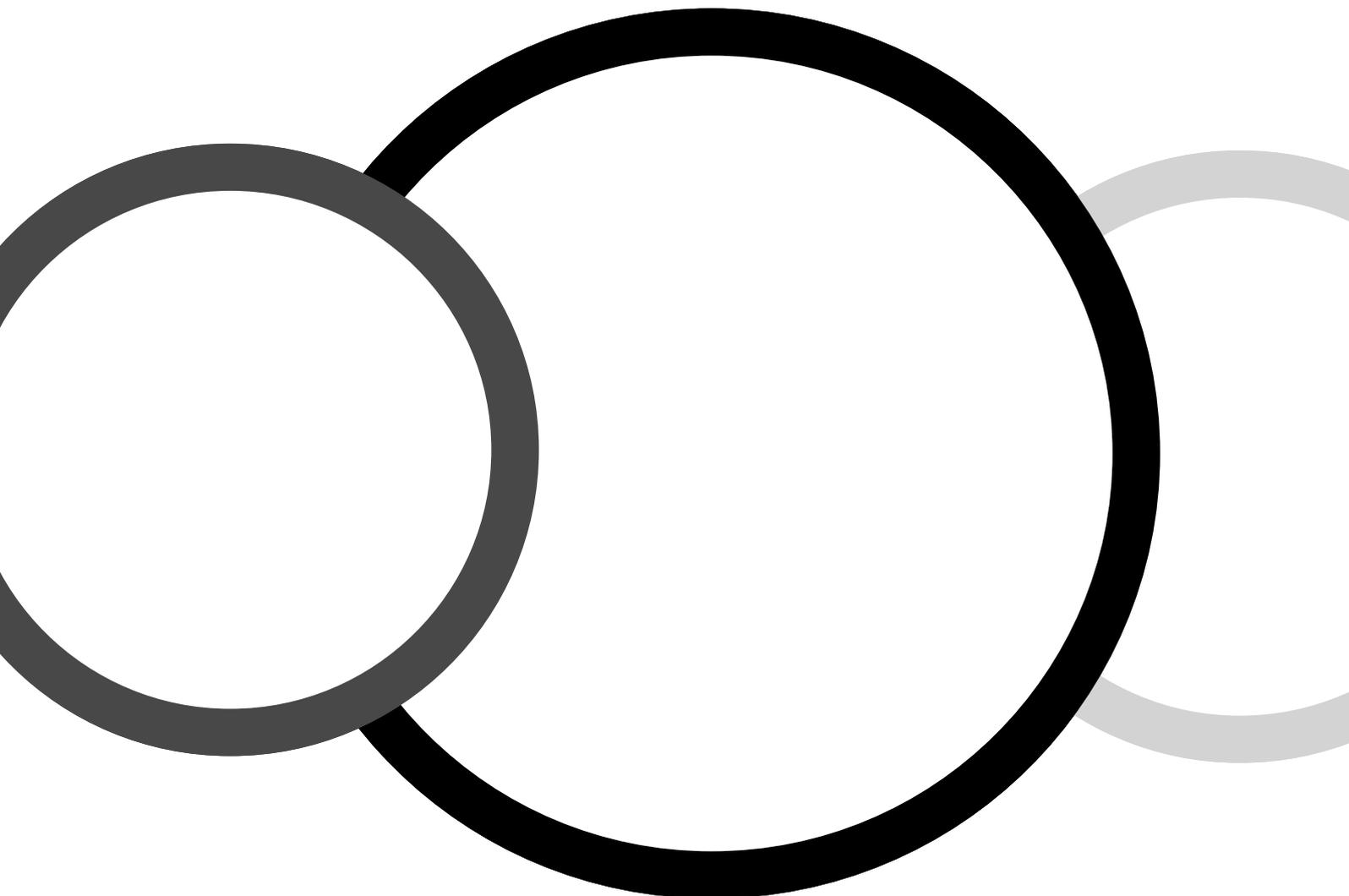


The Essex  
Cardiothoracic Centre

## Patient Information

# Cardiac resynchronisation therapy - pacemaker



## **Having a cardiac resynchronisation therapy - pacemaker (CRT-P)**

You have been referred to The Essex Cardiothoracic Centre (CTC) to have a cardiac resynchronisation therapy pacemaker (CRT-P) fitted. This leaflet describes the operation, so that you know what to expect. If you have any questions, please do not hesitate to contact the arrhythmia

### **What is a cardiac resynchronisation therapy – pacemaker (CRT-P)?**

A CRT-P is a small metal box-shaped device which contains a battery and electronic circuits. The box is implanted under the skin, usually under your left collarbone, and is connected to your heart by wires (called leads). A CRT-P monitors your heart and helps support your heart function by producing electrical impulses to co-ordinate the contractions of the chambers of your heart.

### **How the heart works**

The heart is a muscular pump which delivers blood containing oxygen to the body. It is divided into two upper chambers (atria) which collect blood returning through the veins; and two lower chambers (ventricles) which pump blood out.

The heart has an electrical system. This normally drives the heart to

beat in a regular organised way. Each normal heart beat begins with an electrical impulse from a group of specialist cells called the sinus node (SA node). These electrical impulses travel across the top two chambers of the heart, down through the atrio ventricular node (AV node), then spread across the bottom chambers, causing the heart to contract and pump.

When the heart's electrical system is working normally then conduction across the left lower chamber and right lower chamber (ventricles) occurs simultaneously meaning that contraction of the chambers is synchronised.

Some patients who are suffering from heart failure (where the muscle of the heart is damaged or diseased and not working efficiently) have a delay in the electrical conduction through their heart which results in un-coordinated contraction of the lower chambers of their heart. This can lead to a weaker heart and

worsen heart failure symptoms. These patients may benefit from CRT.

CRT uses three leads, one lead in the top left chamber of the heart (atria), a second in the lower right chamber and an additional third lead on the back wall of the lower left chamber. These leads co-ordinate electrical conduction in the heart and the lower chambers (ventricles) are paced simultaneously which results in synchronised contraction of the lower chambers. This may result in an improvement in symptoms and a delay in further deterioration of heart function.

The operation to insert the CRT device will be performed under local anaesthetic. You may need to stay in hospital overnight.

### **Points to note**

- A date will be arranged for you to have a pre-admission assessment. This will take place at the CTC. A nurse will take some details to make sure you are well enough to have a CRT-P fitted. Your blood pressure, ECG, weight and pulse will be checked.

- You will need to arrange for somebody to bring you to the hospital and collect you by car or taxi on the day of your operation. You will not be able to drive yourself. You will not be able to travel by public transport.
- If you have any special needs or requirements, please tell the nurse during your pre-admission assessment appointment.
- If you need ambulance transport because of your medical condition, this can be arranged for you. Please contact the CTC Patient Activity Office on 01268 524900 ext 4191/4192.

On the day of your operation please remember to bring with you:

- All your medication, in its original container.
- Something to read or a personal stereo.
- Overnight bag with your preferred nightwear, dressing gown, slippers and toiletries.
- For security reasons, please do not bring jewellery, large amounts of money/credit or debit cards, mobile phones or anything of great value to you.

The hospital regrets that it cannot accept responsibility for loss or damage to property belonging to patients.

- Please do not wear jewellery, make-up or nail varnish. Your wedding ring may be left on if you wish and we will cover it with tape.
- Unless you are informed otherwise you will be able to have an early light breakfast on the day of your procedure, such as a small bowl of cereal, no later than 6am. Once you have eaten your breakfast, you must not eat or drink thereafter.

### **Should I take my normal medication?**

Unless advised by the nurse at your pre-admission assessment appointment, you should take all your usual medication with a small sip of water.

You may be taking medications that need to be withheld prior to your procedure, if so this will be discussed and explained to you by the pharmacy technician and the arrhythmia nurses during your pre-admission assessment.

If you are diabetic the management of your diabetes and your diabetic medication will be discussed with you during your pre-admission assessment.

### **What happens when I arrive at hospital?**

You will be admitted to the ward by a nurse. Please tell the nurse if you have had any allergic reactions in the past or if you think you might be pregnant.

The electrophysiologist (a specialist in the electrical system of the heart) who will perform the procedure will come to see you. They will explain the procedure and any side-effects or possible complications for you. They will then ask you to sign a consent form. If there is anything you don't understand or if you have any questions, please ask.

### **What happens during the procedure?**

- You will be taken to the cardiac catheter lab for your operation. The room is similar to an operating theatre.

- There will be a team of people present, including an electrophysiologist, a physiologist, nurses and a radiologist who will assist with the x-ray equipment.
- You will be given a local anaesthetic and possibly a mild sedative to make you relax however you will remain conscious throughout the procedure.
- You will need to lay flat during the procedure and you will be asked to lie as still and relaxed as possible. If you have difficulty laying flat please discuss this with the Arrhythmia Nurses prior to your admission.
- The nurse will clean your chest with antiseptic solution and cover you with sterile drapes. You will also have a drape around your head and you may have a light drape covering one side of your face. Please tell the nurse if you find this uncomfortable and we will make every effort to address this.
- You will be attached to a heart monitor so that we can monitor your heart.

## **Having a CRT-P fitted**

- Cardiac resynchronisation devices are implanted by making a small cut (5cm / 2 inches), in the upper chest, just below the collar bone, usually on the left side.
- An x-ray machine will be positioned above you and may be moved around when the CRT-P is being fitted.
- Three leads are then inserted into a vein. The tips of the first two leads are advanced until they reach inside the heart chambers, the third lead is advanced through a vein in the heart to reach the back wall of the lower left heart chamber. The leads are then connected to the device, which is placed under the skin. You may feel some pushing at the top of your chest and a fluttering sensation in the chest. This is normal so please do not worry. If you do feel uncomfortable, please tell the nurse.
- The wound will be stitched with either dissolvable or non-dissolvable stitches. You will be told which you have, and whether these will be removed.

## **Are there any side-effects or possible complications?**

Cardiac resynchronisation therapy device implantation is a safe procedure. Complications may include:

- infection
- bleeding
- bruising

All of these can be treated if they occur.

Other complication risks will be discussed in your pre-admission clinic by the arrhythmia nurse.

## **What happens after the operation?**

You may need to stay at least one night after the operation. You may need to rest in bed, in a sitting position for a few hours after the operation. Once you are fully awake you will be allowed to eat and drink normally. It is important to avoid lifting the arm on the same side of the CRT-P above shoulder level until you have had your first outpatient CRT-P check in the pacemaker clinic.

You will need to have a chest x-ray and have your CRT-P checked before you go home.

Before you leave the hospital your new device will be checked and you will be given an identification card which you should carry with you at all times.

You will be told about any changes to your medication and how to care for your wound before going home.

You will be advised when to restart any medication that was withheld, before you go home.

## **What happens when I leave hospital?**

You will need to be collected by car. Do not use public transport. You should have someone stay with you for the first 24 hours after returning home.

## **Taking care of your wound**

A clear dressing will be sprayed on your wound before you leave hospital – this will gradually dissolve over the next week or two.

You must keep the wound site clean and dry for seven days (if you are not diabetic) or 10 days (if you are diabetic) or until your stitches have been removed. You can have a bath or shower but you must ensure that the wound stays completely dry.

After this time you may bath or shower as normal, taking care around your wound until it is healed. It is common to have some discomfort around the site of the wound. Pain relief such as paracetamol may be taken to relieve this.

You should avoid wearing tight clothing over the CRT-P site. Women may find that a soft pad placed under their bra strap will help to reduce any skin irritation. Some bruising is quite normal.

### **Returning to normal activity**

Until new tissue has had the chance to form around the leads, there is a small possibility of them moving. Avoid lifting the arm on the same side as the CRT-P above shoulder level until you have had your first outpatient clinic check which will be approximately 4-6 weeks after your procedure. Do not restrict all movement but try to avoid any sudden or jerky movements that could cause problems. It is very important to keep some mobility so gentle arm exercises are important to prevent your shoulder becoming stiff.

Do not play any vigorous sports such as rugby, swimming, tennis or golf for at least one month.

You should not use the affected arm for lifting or carrying heavy shopping until your CRT-P clinic check.

Once you have had your first CRT-P clinic check you will be able to return to normal activity.

Once the wound is healed a normal lifestyle can be resumed.

You may resume sexual activity as soon as you feel fit. You should avoid any position that will put pressure on the affected arm/shoulder for the first four weeks.

### **Returning to work**

You should notify medical staff at your workplace that you have had a CRT-P fitted.

You should take a month off work to allow the CRT-P and leads to settle. If necessary you can self certificate or obtain a medical certificate from your GP, please ask the arrhythmia nurses if you have any concerns.

## **Driving**

You must notify the DVLA that you have had a CRT-P fitted. The DVLA guidelines state that you should not drive for one week following your pacemaker implant.

If you hold a LGV/PCV license, this procedure disqualifies you from driving for six weeks with possible re-licensing required thereafter. You should contact the DVLA as these guidelines are subject to changes. All driving restrictions will be clarified and discussed with you by the arrhythmia nurses and physiologist at the CTC. If you have access to the internet the DVLA regulations are available at [www.dvla.gov.uk](http://www.dvla.gov.uk)

A 4-6 week follow up appointment will be arranged for you in the cardiology department. This check takes approximately 15 minutes, to monitor the CRT-P function and check the battery. You will also have the opportunity to ask any questions.

## **Wound infection/ swelling**

If you notice any reddening, or swelling near your CRT-P please contact the arrhythmia nurses, their details are on page 11 of this leaflet, and we will arrange for you to be seen at the CTC if needed.

## **How long will my CRT-P last?**

The life of CRT-P batteries varies depending on how much they are used. Regular attendance at the device clinic will allow us to predict when the battery will need replacing. Battery replacement is a simple procedure involving a short stay in hospital. The operation is performed under a local anaesthetic and the old CRT-P is removed and replaced with a new CRT-P and battery.

## **What is my CRT-P identity card for?**

You will be given your CRT-P identity card before you leave the hospital. Please remember to carry it with you at all times. Do inform your GP, dentist, physiotherapist or other healthcare professionals who may use electrical appliances to treat you that you have had a CRT-P inserted. The card tells the doctors the type of CRT-P you have and its settings.

## **Can I travel by air?**

You can safely travel abroad with your CRT-P. However, it is necessary to carry your CRT-P identification card with you when you travel by plane as you may need to show this to the security staff.

### **Airport security systems**

You should show airport security staff your CRT-P identity card. It is advisable to avoid walking through airport detector archway/security machines or to be checked with a handheld detector. The metal detector should not be placed directly over your CRT-P because this can temporarily interfere with your CRT-P. Where some patients have walked through the security machines there have been no reported problems. If you cannot avoid going through the security machines, walk through briskly.

## **Can electrical equipment affect my pacemaker?**

Most electrical items that you encounter will not affect your CRT-P. Today's CRT-P devices have built-in safety features which protect them from electrical interference from all common electrical appliances encountered in daily life.

If you are working with high voltage industrial equipment and powerful magnets, please call the pacing and ICD clinic. Their details are on page 11 of this leaflet.

### **Household / domestic appliances**

Practically everything in the household environment is safe for CRT-P patients. These include:

- Microwave ovens
- Televisions
- Radios and stereos
- All kitchen equipment
- Hairdryers and shavers
- Vacuum cleaners
- Garden equipment

## **Mobile phones**

Mobile phones are safe, but it is recommended that you use the phone on the opposite side to the CRT-P (six inches away from the CRT-P). It is safe for other people to use a mobile phone close to you.

## **Shop security systems**

It is advised you should walk straight through the shop doorway without loitering; your CRT-P should not trigger the alarm system.

## **Hospital environment**

Most equipment used in hospitals will not cause any interference with the CRT-P. If you need hospital or dental treatment it is important that you let medical and dental staff know you have a CRT-P so that they can assess if their equipment is safe to use.

TENS machine in particular should be avoided (sometimes used for pain control).

## **X-rays**

X-rays do not interfere with a CRT-P.

## **MRI scans/ CT scans**

CT scans is safe to have. However, people who have CRT-P should avoid MRI scans.

## **Radio Frequency (RF)**

It is unlikely that most patients will come across sources of RF that will cause problems. Please remember that it is highly unlikely that anything will cause problems with your CRT-P. If you are concerned about anything at all, please call us.

## **Who should I contact if I have any questions?**

If you need to contact us for advice regarding your CRT-P or care, please contact the arrhythmia nurses or the pacing and ICD clinic 8am-4pm Monday to Friday, see page 11 for details.

## **Where can I find further information?**

If you need to contact us regarding your procedure, please telephone The Essex Cardiothoracic Centre

- Arrhythmia nurses:  
01268 394021  
[arrhythmia.nurses@btuh.nhs.uk](mailto:arrhythmia.nurses@btuh.nhs.uk)
- Pacing and ICD clinic  
Essex Cardiothoracic Centre  
  
For appointment queries and transport requests:  
01268 694516  
  
For all other queries  
01268 524900 ext 4019
- Roding Ward:  
01268 524900 ext 4209  
(out of office hours)

[www.basildonandthurrock.nhs.uk](http://www.basildonandthurrock.nhs.uk)

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E [pals@btuh.nhs.uk](mailto:pals@btuh.nhs.uk)

W [www.basildonandthurrock.nhs.uk](http://www.basildonandthurrock.nhs.uk)

The Trust will not tolerate aggression, intimidation or violence directed towards its staff.

This is a smokefree Trust. Smoking is not allowed in any of our hospital buildings or grounds.

This information can be provided in a different language or format (for example, large print or audio version) on request.