

Information for Patients & Families

Cardiac Resynchronisation Therapy/Pacemaker



Insertion of a device to improve the function of an abnormally contracting heart

This leaflet has been written to provide information about a device that can be put into your chest to improve the function of an abnormally contracting heart called a Cardiac Resynchronising Therapy Pacemaker. We hope it answers some of the questions or concerns you may have. It is not intended to replace talking to medical or nursing staff.

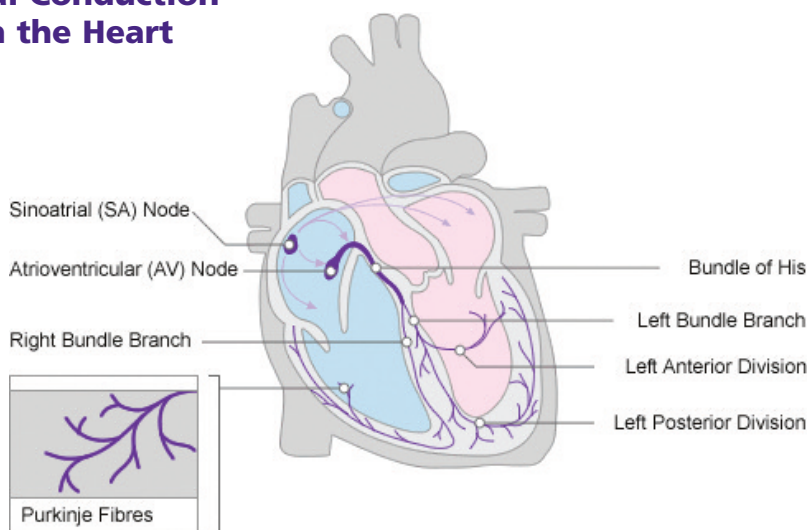
What is a pacemaker?

A pacemaker is a device that can monitor your heart and treat abnormal heart rhythms. The pacemaker is made up of electronic circuits and a battery contained in a small metal covered box. The pacemaker is inserted into your chest, near to your collarbone.

What is Cardiac Resynchronisation Therapy (CRT)?

CRT pacemakers are used to treat heart failure. They improve heart function by making the chambers of the heart pump at the same time. This has the effect of making you feel less breathless and giving you more energy.

Normal Conduction Within the Heart



The heart is a muscle whose job it is to pump blood carrying oxygen to your vital organs. It is made up of four chambers, two at the top called the right and left atria, and two at the bottom called the right and left ventricle. Each heart beat occurs as the result of an electric impulse. The impulse starts in the sino-atrial node (SA node) which is found in the right atrium. The impulse then travels across the atrio-ventricular node (AV-node) which sits between the atria and the ventricles. The impulse then spreads across the ventricles causing the heart to pump.

Why do I need a CRT/pacemaker?

In people who have heart failure their heart does not pump as well as it should. A CRT/ pacemaker or biventricular pacemaker can improve the pump function of their heart by restoring cardiac resynchronisation (making the chambers of the heart pump at the same time).

What are the benefits of having a CRT/pacemaker?

In heart failure the left side of the heart may not pump at the same time as the right. This causes the heart to become ineffective as a pump and can lead to you experiencing breathlessness and feeling tired. This can cause the heart to become weaker and over time any of your symptoms may get worse.

CRT/ pacemakers deliver electrical signals to both sides of your heart at the same time, which can restore coordination and make the heart a more effective pump. It is hoped by doing this, symptoms of breathlessness and tiredness will be improved.

This treatment is not for everyone. Please talk to your doctor to see if it is right for you.

What are the alternatives do I have?

This depends on your symptoms and your condition. Your doctor will discuss this with you.

Is CRT always successful?

Most patients feel some benefit from their pacemaker but despite all the investigations there are a small number of people who unfortunately do not feel any benefit from their pacemaker.

What happens when the pacemaker is implanted?

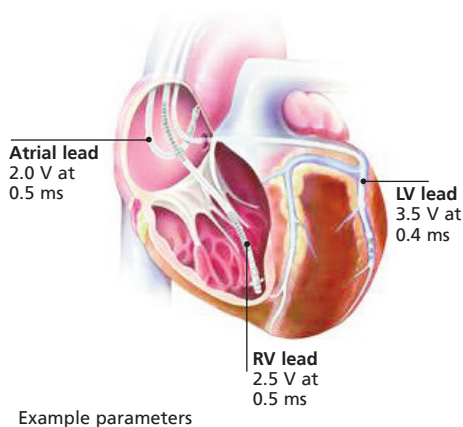
This procedure is frequently done as a day case and you may be asked to attend on the morning of your procedure and go home later the same day.

The procedure takes place in the cardiac pacing theatre. Your skin will be cleaned with antiseptic solution and you will be given a local anaesthetic injection under your skin just below your collarbone.

The staff will attempt to minimise any pain as much as possible by using sedative drugs and pain killers as required. They will actively monitor you throughout your procedure to ensure that you are as comfortable as possible. However, if you suffer significant pain or find the procedure unpleasant then you should inform staff immediately. The level of pain that patient's experience does vary from feeling nothing at all or minimal pain to significant pain and unfortunately this cannot be predicted. If you do experience pain and if the doctors are unable to control the discomfort then your procedure will be stopped, this happens infrequently

The anaesthetic will numb the area and allow the doctor to insert the leads into the veins within your heart.

Programmable outputs for each lead



Following this the leads will then be attached to a generator/ battery which will be placed under the skin in your chest. The wound is closed together with special skin glue which means no stitches need be removed.

What are the risks?

There are some small risks associated with having a pacemaker fitted.

Very rarely some people experience sensitivity to the device known as (*diaphragmatic twitching*). This can be resolved in pacemaker clinic by changing the pacemaker settings.

In some patients it is not possible to position all of the leads. If this happens your consultant will discuss other options with you before you go home.

There is a small risk of infection, bleeding and bruising to the pacemaker site.

There is a small risk that the position of the pacemaker lead may move which would require it to be repositioned. The position of the leads is checked on x-ray before you are allowed home.

There is a small risk of puncturing the lung during the procedure. This is also detected on x-ray. If a pneumothorax (puncture of the lung) is detected it is often allowed to heal without treatment. However if fluid has leaked into your lung it may need a simple procedure to drain this fluid.

Fasting guidelines prior to your procedure

You will be instructed when to stop eating or drinking on your admission letter. It is most important to note that you should fast for the specific length of time stated in the letter and not for a shorter or longer period of time. This is to ensure you have a safe procedure.

If you fast for too short a time it may result in your procedure being postponed or cancelled. If you fast for a longer period of time this may result in you becoming dehydrated (too little fluid in the body) which can lead to complications during or after your procedure.

For example - if your letter asks you to fast from midnight – it is safe to eat and drink up until this time therefore you can have a snack and a drink after your tea or before you go to bed.

If you have any queries regarding the length of time you need to fast please contact your consultant's secretary, the number will be given on your admission letter.

What happens following the procedure?

Once you are back on the ward you will be asked to remain in bed for a short time. You will now be able to eat and drink. The wound may feel sore and bruised and it is recommended that you take regular painkillers especially for the first day or two.

You should ensure the wound is kept clean and dry. It is fine to use the shower or bath as long as you do not submerge the wound in water for the first two weeks. It is advised that you do not rub the area over the wound to dry the skin but to pat it gently.

You will usually be allowed to go home the same day following a pacemaker check and a chest x-ray. The pacemaker check usually takes 15 minutes and this is to ensure the pacemaker is working properly. The physiologist will give you a pacemaker identification card which gives the details of the model and make of your pacemaker. It is recommended that you carry this card with you at all times.

When you go home

Some people may feel worried about going home. Please ensure you speak with one of the medical or nursing staff if you have any worries or concerns. This is also true once you go home; if you feel upset or down it is important to let someone know how you feel.

Arm movements

When you first go home we want to avoid the leads moving out of place until your body has had a chance to heal around them.

We recommend that you avoid lifting your arm above your shoulder for the first 4 weeks. Extra tissue will grow around the leads and prevent them from moving.

Wound site

The wound takes 6 weeks to heal fully. If you notice any redness, swelling, pain, bleeding or oozing pain around the site it may be a sign of wound infection and you need to contact the pacemaker clinic for advice.

Will I be able to feel the pacemaker?

You will be able to feel the pacemaker box under your skin, along with other lumps close by. These lumps are where the leads are attached to the pacemaker. If the leads or the box continue to feel extremely uncomfortable once the swelling has gone down it is important that you inform the physiologist, specialist nurse or doctor looking after you.

You should not be aware of the pacemaker working. Some people who have a slow heart rate prior to their pacemaker being implanted are aware their heart is beating slightly faster following their pacemaker. The pacemaker will not stop your heart from speeding up and if you suffered from palpitations before then they are likely to continue following the pacemaker.

Getting back to normal

Following a short recovery period you should be able to return to your previous activities; however there are some restrictions in place to ensure your safety.

Driving

There are some restrictions on driving following insertion of a pacemaker and this depends upon why you have had your pacemaker fitted. It is important that you discuss this with your nurse or doctor at the hospital. There are also the Driving and Vehicle Licensing Agency (DVLA) guidelines which you can find on;

<http://www.direct.gov.uk/en/motoring/driverlicencing/medicalrulesfordrivers>

Activity

Following a period of recovery of approximately 4 weeks it is recommended that you increase your level of activity if possible. It is important that you keep yourself active to keep your heart healthy.

You are able to take part in most sports with a pacemaker however we do recommend that you avoid any contact sports as this can result in damage to your pacemaker.

Travel

Travelling aboard with a pacemaker is safe. We do advise you to take your pacemaker identification card with you and to show it to the airport security staff.

Electromagnetic interference

Electromagnetic interference will not damage your pacemaker. However it can interfere with the settings for the period of time that you are in contact with it. Household equipment such as televisions, remote controls, computers, ordinary radios, electric razors, fridges, cookers, microwaves will not affect your pacemaker as long as they are in good working order.

If you do experience any feelings of dizziness or palpitations whilst using an electrical appliance you should move away from the device and seek specialist advice from either your physiologist or nurse.

Mobile phones

It is recommended that you keep your mobile phone more than 6 inches away from your pacemaker. Therefore you should use your mobile phone in the ear opposite the side of the pacemaker. Do not keep a mobile phone in a coat or shirt pocket directly over your pacemaker.

Magnets

Magnets can interfere with your pacemaker. Do not carry magnets or place them over your chest.

Shop security systems can cause interference with pacemakers therefore we recommend that you walk through at normal speed and avoid waiting in those areas.

Medical equipment

Most medical equipment will not cause any interference with your pacemaker. However if you use a TENS machine it may interfere with your pacemaker depending on where it is placed. Please discuss this with the physiologist.

We do advise that you let medical and dental staff know that you have a pacemaker. If you are going into hospital it is important to take your identification card with you.

Investigations

It is safe to have investigations such as X-rays, CT scans, ultrasound scans and mammograms. However magnetic resonance imaging (MRI) should be avoided.

Arc welding

Arc welding is not advised, but can be performed in special circumstances. Please seek advice from the physiologist.

Pacemaker clinic

Your pacemaker needs to be checked regularly. During the clinic visit, the physiologist will examine your wound and check the

pacemaker using a special machine which allows us to externally determine the battery life, assess the leads and alter the settings if required.

Battery life

The battery will normally last for six to ten years. Staff at the pacemaker clinic will let you know when the battery needs to be replaced and it will not be allowed to run down fully.

Contacting the pacemaker clinic

The pacemaker clinic service runs Monday – Friday 9am-5pm.
Telephone 0151 600 1712

Outside of these hours please contact your GP or NHS Direct on 0845 46 47

Contacting the Heart Failure/ ICD Nurses:

If you have any queries you can contact the Heart Failure/ ICD nurses and leave a message on the advice line Telephone - 0151 600 1522

For further information visit:

www.lhch.nhs.uk
www.medtronic.com
www.guidant.com
www.nhsdirect.nhs.uk
www.bhf.org.uk

Or contact:

The British Heart Foundation Heart Information Line on 0845 070 8070.

If you require a copy of this leaflet in any other format or language please contact us quoting the leaflet code and the language or format you require.

إذا لديك الرغبة في الحصول على نسخة من هذه المعلومات بأي لغة أخرى أو بشكل آخر (على سبيل المثال بخطوط كبيرة) ، الرجاء الاتصال علينا على الرقم 0151 600 1257 موضحاً الشكل أو اللغة التي ترغب فيها.
如果您想索取一份以其他語文或形式（如大字體）編印成的資料傳單，請致電 0151 600 1257 向我們查詢，並說明您所需要的形式和語文。
ئەگەر ئەم زانیاریانەت بەھەر زمانیکی تر یاخود شیوازیکی تر دەوئیت (بۆ نموونە بە چاپی گەورە) ئەوا تکایە بە ژمارە تەلەفونی 0151 600 1257 پەیوەندیان پێوە بکە و نامازە بەهەم زمانە یانخود شیوەیەکی کە دەتەوئیت
W celu uzyskania niniejszej informacji w innym języku lub formacie (np. dużym drukiem), prosimy o kontakt z nami pod numerem 0151 600 1257 podając wymagany format lub język.
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