

Royal Brompton and  
Harefield hospitals



Harefield Hospital

# Your cardiac pacemaker





---

## Contents

• What is a pacemaker?	3
• How does a pacemaker work?	4
• Before the procedure to fit your pacemaker	5
• Having your pacemaker fitted	5
• After your pacemaker is fitted	6
- Caring for your wound	7
- What to do if you feel unwell	8
- Follow-up appointments	8
- What to bring to follow-up appointments	9
• Living with your pacemaker	9
- Driving	9
- Using household electrical items	9
- Going back to work	10
- Exercise	10
- Travelling abroad	10
- MRI scans (magnetic resonance imaging)	10
• Frequently asked questions	11
- What is phrenic nerve stimulation?	11
- What is home monitoring?	11
- When will I need to attend the pacemaker clinic in person?	12
• Contact details	13
• Useful information	13

This leaflet gives you general information about pacemakers, and what to expect before, during and after your pacemaker has been fitted. It does not replace the need for personal advice from a qualified healthcare professional. Please ask us if you have any questions.

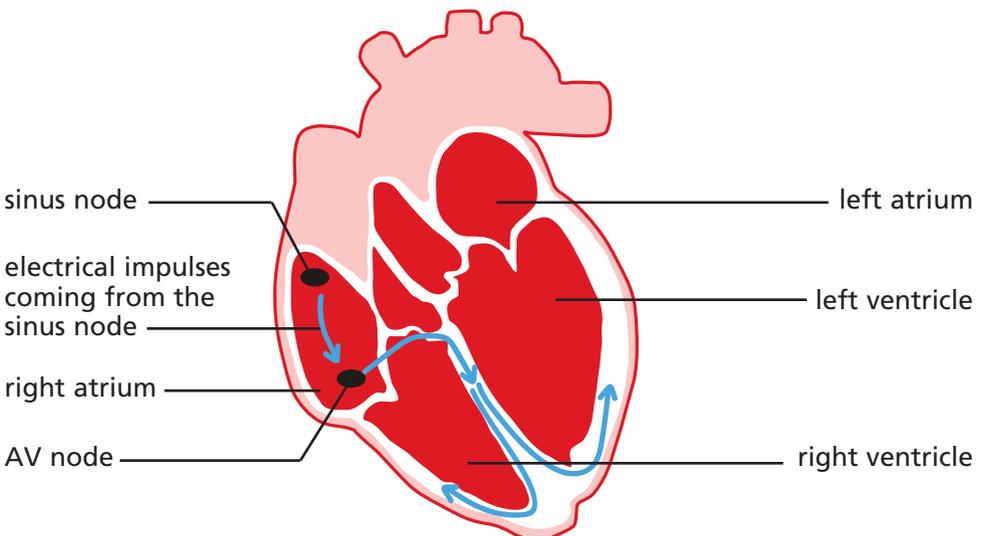
## What is a pacemaker?

A pacemaker is a small electrical device fitted to keep your heart from going too slowly.

Pacemakers are most usually fitted to treat patients with an abnormally slow heart rhythm. They can also benefit people who have heart failure (when the heart muscle does not pump blood as well as it should).

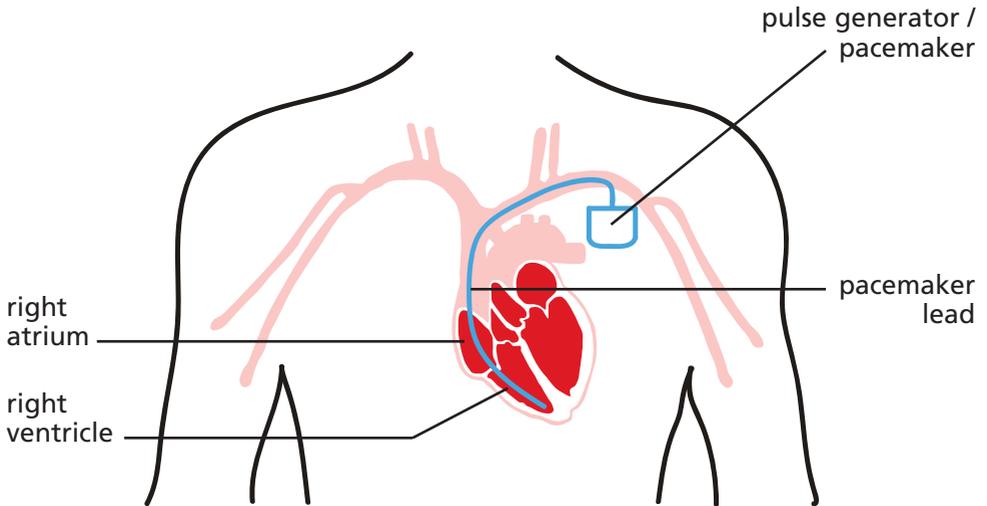
The heart is essentially a pump made of muscle which is controlled by electrical signals. Your heart has its own natural pacemaker – the sinus node (located in the upper right chamber of the heart). The sinus node sends regular electrical impulses to make your heart beat. These impulses are transmitted through the atrioventricular (AV) node and along tissue within the heart muscle causing the lower chambers of the heart to contract and pump blood out of the heart and around your body.

The job of a pacemaker is to take over the role of your sinus node and/or AV node by sending out electrical impulses.



## How does a pacemaker work?

A pacemaker is a small device about the size of a matchbox or smaller. It consists of a pulse generator which has a battery and a tiny computer circuit, and one or more pacing leads that deliver electric pulses to the heart when your own system fails to work properly.



The type of pacemaker you need depends on your heart condition:

- a single chamber pacemaker has 1 lead
- a dual chamber pacemaker has 2 leads
- a cardiac resynchronisation therapy pacemaker (CRT-P), which is also sometimes called a biventricular pacemaker, has up to 3 leads

A CRT-P is a special pacemaker designed to resynchronise (co-ordinate) the heart's contractions which can improve heart function and reduce heart failure symptoms.

Most pacemakers are powered by a lithium battery which sits inside the pulse generator and usually needs to be replaced every 6 to 12 years. The battery life depends on how the pacemaker is programmed for your heart condition.

### **Please note**

If you have a CRT-P, you still need to:

- take your heart failure medicine
- and keep in touch with your local heart failure nurse

## **Before the procedure to fit your pacemaker**

You have a pre-admission appointment 2 to 3 weeks before your procedure.

At this appointment, you meet a clinical nurse specialist (CNS) or cardiac physiologist who goes through your procedure in more detail and answers any questions you may have.

### **You also have some tests**

- Blood tests – to check different areas of your general health.
- MRSA (meticillin resistant staphylococcus aureus) swabs – to check if you have MRSA bacteria on your skin or in your nose. This is a routine test for patients admitted to the hospital. It is an important test that helps to stop the spread of MRSA (sometimes referred to as a 'superbug').

## **Having your pacemaker fitted**

You may have your pacemaker fitted and leave hospital the same day, or you may need to stay in hospital overnight.



---

A doctor, cardiac physiologist, radiographer and a nurse are present during the procedure.

The procedure usually takes place in a cardiac catheter laboratory (cath lab) and takes between 30 minutes to an hour. A CRT-P pacemaker can take longer.

In most cases, we use local anaesthetic to numb the area of the body where the pacemaker is being fitted. This means you are awake during the procedure. However, if you feel anxious, we can give you a small amount of sedation to help you relax. You may experience slight discomfort or pressure while the pacemaker is implanted, but it should not be painful.

We will ask you to lie flat on a special X-ray table. A small 5cm (2in) long cut is made just below the collarbone (clavicle), usually on the left side of your chest, to fit the pacemaker.

The pacing lead is passed inside a vein and positioned correctly, using X-ray to guide it. The lead is then tested and connected to the pulse generator. The pulse generator is placed under fatty tissue beneath the skin and the small cut stitched closed.

The stitches in your wound usually dissolve over time, so you do not need to have them removed. We also use a type of clear glue to cover the wound.

## **After your pacemaker is fitted**

After your pacemaker has been fitted you are taken to a ward where you need to stay in bed for a few hours. We will X-ray your chest to make sure the leads are in the correct position and to check for any complications. A cardiac physiologist also takes a photo of your wound site and checks the function and settings of your pacemaker.

Before you leave the hospital, we give you a pacemaker identification card with details of the make and model of your device. It is important to keep a copy of this with you all the

time. You need to show it to medical, dental or other healthcare staff before a treatment or procedure, because on rare occasions some equipment may interfere with your pacemaker.

We also give you a home monitor (see page 11 What is home monitoring?)

## Caring for your wound

There may be some tenderness and bruising around the area where the pacemaker has been implanted. This may be more extensive if you are on a blood thinner. Keep this area clean and dry.

The glue covering the wound is water resistant, so you may take a shower anytime from 2 hours after the procedure. However, you need to avoid soaking the wound in a bath or going swimming, for example, until it is fully healed. The glue will peel off naturally.

Any procedure where the skin is broken carries a risk of infection. You will be given a course of antibiotics to take home to prevent infection.

## During your recovery

- Gently rotate your arm and shoulder (on the pacemaker side of your body) in small circles each day to gradually increase your arm movement over time.
- Avoid putting strain on your wound. You should not take part in any activity that involves lifting your elbow above shoulder level. You need to avoid lifting any heavy objects and taking part in sports for 4 to 6 weeks.
- Check your wound for increased redness or tenderness, swelling or discharge (oozing fluid). If you are worried about your wound, contact the pacemaker clinic (see Contact details on page 11).



---

## What to do if you feel unwell

If you experience shortness of breath, chest pain or swelling/bleeding from the wound in the first few days after going home, please contact the pacemaker clinic or a clinical nurse specialist (CNS). During evenings and weekends, or public holidays, please phone the hospital switchboard and ask to speak to the cardiology registrar on-call (see contact details on page 13).

You should always contact your GP first if you have a general medical problem. If your GP thinks the problem is related to your heart condition, you will then be referred to us.

## Follow-up appointments

You will need follow-up appointments at the pacemaker clinic for the rest of your life. This is because you need to have your pacemaker checked regularly. It is important you attend each follow-up appointment, so healthcare professionals can make sure that your device is programmed for your individual needs and that the battery lasts for as long as possible.

You usually have your first follow-up appointments 4 to 6 weeks after your pacemaker is fitted and then after another 3 months.

If there are no complications, we will arrange to monitor you from your home monitor based on your individual needs. We will also see you for in person for clinic appointments as needed, until the battery is nearing the time when it will need replacing. We may then invite you for more frequent follow-up appointments until your pacemaker battery needs replacing.

## What to bring to follow-up appointments

Please bring these things with you to each follow-up appointment:

- any paperwork from recent hospital admissions
- clinic letters from your cardiologist
- and a list of your current medicines

## Living with your pacemaker

A pacemaker does not restrict your lifestyle. If your check is satisfactory after the first month, you will be able to continue with all of your normal daily activities.

### Driving

You must inform the Driving and Vehicle Licensing Agency (DVLA) and your insurance company that you have been fitted with a pacemaker and you should not drive for the first week.

For more information, please see the DVLA website:

[www.gov.uk/pacemakers-and-driving](http://www.gov.uk/pacemakers-and-driving)

### Using household electrical items

Pacemakers can be affected by strong magnetic or electrical fields. Problems with household electrical items are rare because pacemakers have a metal casing to shield them from interference and can detect and remove unwanted electrical activity.

However, we recommend that you keep household electrical equipment such as WiFi routers, mobile phones, hairdryers, microwaves and garden tools at least 15cm (6in) from your pacemaker during use.

Induction hobs (used for cooking) generate an electromagnetic field that may interfere with your pacemaker. If you have an induction hob, keep at least 60cm (2ft) between the top of the hob and your pacemaker.



---

## **Going back to work**

If you work in any environments or with any equipment that may affect your pacemaker, electrical fields or strong magnets, for example, please ask your consultant for advice.

## **Exercise**

Exercise should not generally affect your pacemaker.

However, there is a small risk of damage to your pacemaker from very forceful contact, so you should avoid heavy contact sports, such as kickboxing and rugby. Please ask your consultant for advice about when to start exercising.

## **Travelling abroad**

There are no formal restrictions to travelling abroad. Please remember to take your ID card with you to show to security staff and ensure that you have adequate medical insurance.

Airport security staff may do a hand search or check you with a handheld metal detector. In some countries, the authorities insist that you walk through the security gates. If this happens, just walk through the gates. It is unlikely that your pacemaker will be affected.

If you plan to be away for a long time, contact the pacemaker clinic (see Contact details on page 13) to arrange your follow-up appointments in advance.

## **MRI scans (magnetic resonance imaging)**

You may be able to have an MRI (magnetic resonance imaging) scan. Most modern pacemakers and leads are MRI compatible.

If you need MRI scans in the future, you must inform the scanning department that you have a pacemaker and present the ID card you received from the hospital where it was performed.

The pacemaker will need to be checked and reprogrammed for the duration of the scan. You should also ask us for advice when you next attend the pacemaker clinic.

## Frequently asked questions

### What is phrenic nerve stimulation?

The leads on pacemakers deliver electric pulses to the heart. A CRT-P has up to three leads. One of these leads is located inside the veins that run around the outside of the heart. This lead's role is to make the left ventricle beat and resynchronise (co-ordinate) the heart's contractions.

Sometimes an electric pulse from the lead can stimulate the phrenic nerve which controls the diaphragm (a muscle that helps you breathe in and out). This makes your diaphragm twitch (move suddenly). This may feel uncomfortable, but it does not do you any harm.

If this happens, we can usually fix the problem by changing the way your pacemaker is programmed.

If you have this problem during the first few weeks after the procedure to fit the CRT-P or it develops over time, please contact the pacemaker clinic (see Contact details on page 13).

### What is home monitoring?

We give home monitors to all our pacemaker patients. A home monitor is a small device that we ask you to plug into a mains electricity socket in your bedroom when you get home.

The home monitor will then automatically collect and securely send information about your heart health and pacemaker function to the pacemaker clinic.

You need to make sure the home monitor is turned on at all times.



---

If any problems are detected, we will contact you.

## **Benefits of home monitoring**

Home monitoring has these benefits:

- pacemaker problems can be detected earlier
- patients do not need to visit the pacemaker clinic in person as often

## **When will I need to attend the pacemaker clinic in person?**

We will contact you when we need to see you in person at the pacemaker clinic. You may need to attend the clinic for tests or to change the way your pacemaker is programmed, for example.

**Please make sure you:**

- tell us if your contact details change
- always leave your home monitor plugged in and switched on
- contact us as soon as possible if you need to cancel or change any pacemaker clinic appointments

## Contact details

### Harefield Hospital

Pacemaker clinic

**01895 828 553**

(Monday to Friday, 8.30am to 4.30pm)

Email: **[rbh-tr.pacinghh@nhs.net](mailto:rbh-tr.pacinghh@nhs.net)**

Clinical nurse specialists

**01895 826 580** or via the main hospital switchboard on **0330 12 88121**, and ask the operator for **bleep 6339** (available Monday to Friday, 8am to 4pm)

Email: **[rbh-tr.devicesteam@nhs.net](mailto:rbh-tr.devicesteam@nhs.net)**

If you feel unwell during evenings, weekends or public holidays please call **0330 12 88121** and ask to speak to the cardiology registrar on-call.

## Useful information

For more general information about pacemakers, visit:

- Arrhythmia Alliance  
**[www.heartrhythmalliance.org](http://www.heartrhythmalliance.org)**
- British Heart Foundation  
**[www.bhf.org.uk](http://www.bhf.org.uk)**



---

## Your notes

---

If you have concerns about any aspect of the service you have received in hospital and feel unable to talk to those people responsible for your care, call the Patient Advice and Liaison Service (PALS) on:

- Royal Brompton Hospital – 020 7349 7715
- Harefield Hospital – 01895 826 572

You can also email [pals@rbht.nhs.uk](mailto:pals@rbht.nhs.uk). This is a confidential service.



Royal Brompton Hospital  
Sydney Street  
London  
SW3 6NP  
Phone: 0330 12 88121

Harefield Hospital  
Hill End Road  
Harefield  
Middlesex  
UB9 6JH  
Phone: 0330 12 88121

Website: [www.rbht.nhs.uk](http://www.rbht.nhs.uk)

Royal Brompton and Harefield hospitals are part of Guy's and St Thomas' NHS Foundation Trust

إذا كنت ترغب في الحصول على ترجمة فورية لمضمون هذه الوثيقة إلى اللغة العربية، يرجى منك الاتصال بأحد مستخدمينا بجناح المصلحة التي يتم فيها استشفائك. أحد موظفينا سيسعى لترتيب إجراءات الترجمة وإتمامها في الوقت المناسب لك.

Brosurteki bilginin Türkçe tercemesi için tedavi görüyor olduğunuz bölüme bas vurunuz. Bölüm personeli tercemenin gerçekleşmesini en kısa zamanda ayarlayacaktır.

