

Name:

Date of Birth:

CHI:

# Implantation of a permanent pacemaker (PPM)

## Why do I need this procedure?

Your doctor has decided you may benefit from a permanent pacemaker (PPM). The PPM will help to protect you from dangerous slow heart rhythms and importantly prevent dizziness, loss of consciousness and shortness of breath caused by a slow heart rate.

## What is a PPM?

This is a small metal battery-powered device that is implanted under the skin. There are usually 1 or 2 leads attached to the PPM that travel to the heart through the veins. If the heart goes too slowly a small electrical pulse is generated by the PPM that is transmitted to the heart and makes it beat.

Your doctor has recommended that you may benefit from this procedure.

We hope that reading this information pack will give you the information you need to decide whether to proceed. It is important that you understand and share in decision making about your treatment options.

Important questions to consider are:

- Is this test, treatment or procedure really needed?
- What are the potential benefits and risks?
- What are the possible side effects?
- Are there simpler, safer or alternative treatment options?
- What would happen if I did nothing?

## What does it involve?

A doctor or specialist nurse will speak to you before your procedure. On the day a specialist doctor will explain the proposed implantation to you and ask you to sign the consent form to confirm that you understand the procedure, proposed risks and benefits and that you agree to go ahead with it. It is important to ask any questions you may have about the procedure/living with a pacemaker. Antibiotics will be given into a vein on the ward and the team will take you to the procedure area. Once there, the following will happen:

1. You will have a local anaesthetic and sedation or rarely, general anaesthetic for your procedure. Your doctor will discuss this with you.
2. An incision (cut) is made under your collarbone.

3. The electrodes (leads) are inserted into a large vein (blood vessel) that lies just under your collar bone, and positioned in your heart using X-ray screening for guidance.
4. Once in position, the one (or two) electrodes are connected to the generator, which is placed in a pocket under your skin, below your collar bone.
5. The leads and device are then checked and you will return to the ward thereafter.

## How long does it take?

The procedure takes about one to two hours to complete. Very rarely (less than 1%) we may not be able to implant the lead this way, but your doctor will discuss alternative options if needed.

## Will I have any pain or discomfort?

You may briefly feel a sharp pain with the local anaesthetic. You will still be able to feel some pushing sensations but the procedure shouldn't hurt. If it does, then you can be given more pain relief. Your shoulder may feel uncomfortable for a week or so afterwards. You may have swelling and bruising, but this should return to normal in two to six weeks. You will be able to feel the device beneath your skin and it may feel rather strange at first, but this sensation resolves.

## What happens afterwards?

Your doctor will discuss this with you. Once fully awake you will be able to eat and drink. Please ask for painkillers if you need them.

You will have a chest X-ray to check that the leads are in the correct position and that there has been no damage to your lung.

We may need to check the device before you are discharged. A sensor is held over the PPM to program it. This is painless, but you may be aware that your heart is beating slightly faster than normal. You will be given a PPM identity card, emergency information and instructions at this check. You will receive details of your device follow up centre who will review you approximately 6 weeks following implantation.

## What happens when I go home?

- This depends upon the reason for you needing a pacemaker and where you are on your journey to discharge.
- You should be able to return to your normal activities in a week or so.
- Avoid vigorous arm movements and avoid lifting your arm (on the side of your device) above your shoulder for four to six weeks, but otherwise move your arm normally.
- We will give you a PPM registration card (plus information from the manufacturer) – please carry it with you and show it to any dentist or doctor who may treat you.
- If you notice redness, swelling or a discharge at the site of your implant (signs of infection), **please tell your GP immediately or NHS 24 if out of hours.**

## When can I resume driving?

- The Driving and Vehicle Licensing Agency (DVLA) have strict driving restrictions related to having a PPM and these will be discussed with you following your implantation. Generally you may not drive for 1 week following a PPM implant or battery replacement. If you hold a **Group 2** license you may not drive with this license for 6 weeks.

## How long will my PPM last?

The PPM battery will last around 10 years but the batteries will eventually run down and then it will have to be replaced. This will be identified during your follow up.

## Are there any risks?

The implantation is usually very successful, but as with all procedures there are some risks.

- **Lung puncture (Pneumothorax)** – there is a 1% (1 in 100) chance of puncturing the lung as the vein used for the wire runs close to it. This can heal on its own or the escaped air may need removing using a needle or a small drain (tube).
- **Lead replacement** – there is a 2-3% (2 to 3 in 100) chance of one or more of the electrodes slipping out of place or needing to be replaced because it stops working. This can occur on the same day or a few months or years after the procedure. If this happens it must be repositioned under X-ray guidance with a further operation.
- **Infection** – there is a 1-2% (1 to 2 in 100) risk of infection, which is minimised using antibiotics given before the procedure starts. If infection occurs the PPM system may need removing with another operation.
- **Bruise (haematoma)** – there is a 4% (4 in 100) risk of a major bruise (haematoma) which may rarely require removal with a separate operation. A small amount of bruising is usual and settles within a six weeks.
- **Pericardial effusion** (blood leak round heart) – there is a 0.5% (1 in 200) risk of bleeding into the sack surrounding the heart, this can heal itself or you may need a small tube to be put in to remove the blood.
- **Unable to place lead** – there is a very rare less than 1% (less than 1 in 100) chance we may be unable to place one of your leads.

## Will I need further appointments?

Yes, you should attend regular check-ups at an PPM clinic. Some of the monitoring can be done with equipment supplied by the hospital but used at home with the phone and/or the internet.

## Do I need to take any precautions?

- **Mobile phones** – it is safe to use a mobile phone, but keep it as far as possible from your PPM, using the opposite ear or a headset.
- **Electronic surveillance** – security at airports or anti-theft devices in shops usually don't interfere with PPMs. You are advised to walk through them at a normal pace and not to linger beside them.
- **MRI scans** – there may be restrictions on MRI scanning but increasingly devices are used that are safe with some MRI scans. Please inform the person performing the MRI.
- **Lithotripsy** – this is a type of treatment for kidney stones, which may require special precautions if you have a PPM.
- **Magnets** – Do not carry or place a magnet over your device as this may temporarily disable the device.
- **Sexual activity** – You can resume sexual activity after the procedure, however you should avoid positions that place pressure on your arm or chest for the first four to six weeks. The device will not cause any harm to your partner.
- **Exercise** – It's important to exercise but try to avoid contact sports where trauma to the device may occur as this can damage the PPM or leads.
- **Travel** – You can safely travel abroad with your device. You are advised to show the security staff your devices identification card and walk at a normal pace through the scanner. Insurance companies may try to increase your premiums to very high levels. It is suggested you shop around if this happens.

- **Operations** – If you require an operation you must tell your surgeon/doctor or anaesthetist that you have a PPM. It may be necessary to temporarily reprogram the device during the operation.

## **Useful Contacts**

For any general queries regarding your pacemaker you can also call Arrhythmia Nurse Specialists at Golden Jubilee on 07970187324 (8-6 Monday-Friday).

Out with these times or in an emergency (acute swelling or pain/feeling unwell) you should contact your GP/NHS 24 or dial 999.

Further support and information is available:

### **British Heart Foundation**

Lyndon Place  
2096 Coventry Road  
Sheldon  
Birmingham, B26 3YU  
0300 330 3322  
[www.bhf.org](http://www.bhf.org)

### **Arrhythmia Alliance**

Helpline – 01789 450 787  
PO Box 3697  
Stratford-Upon-Avon Warwickshire  
CV37 8YL  
e-mail:  
[info@heartrhythmcharity.org.uk](mailto:info@heartrhythmcharity.org.uk)  
[www.heartrhythmcharity.org.uk](http://www.heartrhythmcharity.org.uk)



## Implantation of PPM

### STATEMENT OF PATIENT

Please read this form carefully. If your treatment has been planned in advance, you should already have a copy of the patient information leaflet which describes the benefits and risks of the proposed treatment. If not, you will be given a copy now. If you have any further questions, do ask - we are here to help you. You have the right to change your mind at any time, including after you have signed this form.

**I agree** to the procedure or course of treatment described on this form.

**I understand** that you cannot give me a guarantee that a particular person will perform the procedure. The person will, however, have appropriate experience.

**I understand** that I will have the opportunity to discuss the details of anaesthesia with an anaesthetist before the procedure, unless the urgency of my situation prevents this. (This only applies to patients having general or regional anaesthesia).

**I understand** that any procedure in addition to those described on this form will only be carried out if it is necessary to save my life or to prevent serious harm to my health.

**I understand** that tissue samples will only be taken in relation to the procedure explained to me. No samples will be taken for quality control, clinical education or research purposes.

**I have been told** about additional procedures which may become necessary during my treatment. I have listed below any procedures **which I do not wish to be carried out** without further discussion.

**I have received a copy of the Consent Form and Patient Information leaflet: Implantation of a permanent pacemaker which forms part of this document.**

Patient signature:

Name (PRINT):

Date:

A **witness** should sign below if this patient is unable to sign but has indicated his or her consent. Young people / children may also like a parent to sign here.

Witness signature:

Name (PRINT):

Date:

### CONFIRMATION OF CONSENT (to be completed by health professional when the patient is admitted for the procedure, if the patient has signed the form in advance).

On behalf of the team treating the patient, I have confirmed with the patient that they have no further questions and wish the procedure to go ahead.

Health Professional signature:

Name (PRINT):

Job title:

Date:

**Important notes** (tick if applicable):

See advance decision to refuse treatment

Patient has withdrawn consent (ask patient to sign/date here)

I (the patient) understand that my information held by the NHS may be used to audit the quality and outcome of clinical treatment including the external validation of hospital notes.

Agree  Disagree  (tick as appropriate)

Patient signature:

Name (PRINT):

Date:

Name:
Date of Birth:
CHI:



**Consent Form**  
**Procedure Specific Patient Agreement**

**Permanent Pacemaker**

Insertion of wires to heart chambers and attaching to electronic pulse generator.

**STATEMENT OF HEALTH PROFESSIONAL** (to be filled in by health professional with appropriate knowledge of proposed procedure)

**I have explained the procedure to the patient.** In particular, I have explained the intended benefits:

- To relieve symptoms associated with a slow heart rate.

**Significant, unavoidable or frequently occurring risks:**

- Bleeding, bruising, infection and pain (5-10%)

**Commonly occurring risks (5-10%):**

- Mild bruising is common requiring no intervention. Major bleeding or bruising requiring operation 1% (increased if taking blood thinners)
- Infection (1-2%)
- Discomfort and pain
- Pneumothorax (1%) damage to lining of the lung leading to air leak and lung collapse
- Lead displacement (1-3%) – right lower chamber lead 1%, right upper chamber lead 1-2%

**Uncommon but more serious risks:**

- Haemothorax (bleeding into the chest cavity), pericardial effusion (bleeding around the heart), damage to blood vessels (including those supplying the heart), dangerous heart rhythms or heart tear.
- The risk of death is less than in 1 in 3000 procedures)

**Uncommon possible later issues:**

- Movement of leads requiring intervention, major bleeds needing reintervention, wound discomfort.

**Any extra procedures which may become necessary during the procedure:**

- Blood transfusion (required very infrequently).
- Other procedure (please specify):

I have also discussed what the procedure is likely to involve, the benefits and risks of any available alternative treatments (including no treatment) and any particular concerns of this patient. The patient has had the information leaflet for this procedure and/or discussed it with a health professional and has had sufficient time to make an informed decision.

I am satisfied that this patient has the capacity to provide his/her consent to the procedure.

This procedure will involve:

General and/or regional anaesthesia       Local anaesthesia       Sedation

Health Professional Signature: \_\_\_\_\_ Name (PRINT): \_\_\_\_\_

Job title: \_\_\_\_\_ Date: \_\_\_\_\_

**STATEMENT OF INTERPRETER** (where appropriate)

I have interpreted the information above to the patient to the best of my ability and in a way in which I believe he/she can understand.

Interpreter signature: \_\_\_\_\_ Name (PRINT): \_\_\_\_\_ Date: \_\_\_\_\_

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Agree  Disagree  (tick as appropriate)

Patient signature: \_\_\_\_\_ Name (PRINT): \_\_\_\_\_ Date: \_\_\_\_\_