

Having a Permanent Pacemaker fitted or changed

Cardiology Day Ward and Cardiac Catheter Suite

The aim of this booklet:

- To tell you more about this procedure which your doctor has already explained to you.
- To help you understand what will happen to you.
- To explain the possible risks of this procedure.
- To explain other alternatives if you do not wish to go ahead with the procedure.
- To make sure you know as much as possible about the procedure before you agree to it and sign the consent form.

What is a pacemaker?

A pacemaker ('pulse generator') is a small metallic electronic device. It weighs very little - about one or two ounces (25 - 50 grams), and is smaller than a matchbox. It watches your heart beats and when required, sends small precisely timed electrical impulses to your heart. Most pacemakers are powered by a lithium-ion battery and last between 8 and 10 years before they need to be replaced. The pacemaker is connected to one or two insulated wires ('electrodes/leads'). These wires carry impulses from the pacemaker to your heart and also send information from your heart back to your pacemaker. The pacemaker ('pulse generator') and the wires ('electrodes/leads') together comprise the pacemaker system.

Implantation of the pacemaker is a surgical procedure performed under sedation (giving you an injection to make you sleepy) and local anaesthetic, or can be done as a day case. It can take between one to two hours to perform.

The team involved will consist of a doctor, a nurse, a cardiac physiologist and a radiographer for taking x-rays.

If you are having a complete system fitted you may be required to stay overnight, or it can be done as a day case. If you are having your generator (battery) changed it will involve only a few hours stay on the cardiology day ward. If there are no complications you will be allowed to go home after three to four hours.

The prevention of infection is a major priority in all healthcare and everyone has a part to play.

- **Please decontaminate your hands frequently for 20 seconds using soap and water or alcohol gel if available**
- **If you have symptoms of diarrhoea and/or vomiting, cough or other respiratory symptoms, a temperature or any loss of taste or smell please do not visit the hospital or any other care facility and seek advice from 111**
- **Keep the environment clean and tidy**
- **Let's work together to keep infections out of our hospitals and care homes.**

Why do I need a pacemaker?

The heart has four chambers, two upper called as 'atria' and two lower, called as 'ventricles'. It also has its own specialised wiring system, similar to that found in a house/flat or any building. Normally, the rhythm of the heart is controlled by the natural pacemaker which generates electrical impulses. This pacemaker is situated in the upper portion of the right upper chamber. From here, electrical impulses spread, initially to both the upper chambers and then to the lower chambers of the heart, through the specialised wiring system. This enables the upper and lower chambers of the heart to beat in a regular coordinated manner called as 'sinus rhythm'. A normal adult heart generally beats at between 60 and 100 beats per minute.

You may need a pacemaker if your heart is beating slowly, all the time or from time to time. It is usually due to one of the following reasons:

- If your natural pacemaker is beating slowly ('sinus node disease')
- If the electrical impulses generated by your natural pacemaker are unable to be spread to the rest of the heart due to a defect in the specialised wiring system ('heart block')
- Slow irregular heart beats
- Slow heart beats caused by medication which are necessary to treat other conditions that you maybe suffering from.

Patients with slow heart beats usually experience symptoms in the form of dizziness, tiredness, shortness of breath, blackouts, or near blackouts. Some patients may not experience any symptoms at all. The type of pacemaker you have and how many leads are needed will depend on what your doctor decides is most suitable for you.

What are the risks and benefits of having this procedure?

Risks:

- Bleeding from the insertion site.
- Blood collection (haematoma) at the insertion site.
- Damage to blood vessels during lead insertion.
- Small risk of surgical wound infections.
- Risk of a pacemaker lead dislodging, in which case it may need to be repositioned.
- A small risk (1-2 in every 100 cases) of 'pneumothorax' (leak of air from the lungs), in which case a drain may need to be inserted to re-expand the lung. This problem usually settles in 2-3 days.
- A very small risk of the pacemaker moving or coming to the surface.
- A small risk of collection of fluid in the sac which surrounds the heart (pericardial effusion) which rarely may need to be drained
- Death is a rare complication of a pacemaker implantation.

Benefits:

- Modern pacemakers are very small, comfortable and reliable.
- Correction of your abnormal heart rate.
- Elimination of unpleasant symptoms such as dizziness, tiredness, shortness of breath, blackouts or near blackouts.
- Improved quality of life.

What if I decide not to have a pacemaker?

If you choose not to have a pacemaker, you will continue to have the symptoms for which it is being advised. Usually, there is no alternative way of treating the condition. Medication is not normally of any benefit.

For some patients, depending on the reason for the implant, life expectancy is reduced without the pacemaker.

What preparation is needed?

On the day of the procedure:

- You must not eat for four hours or have anything to drink for two hours before the procedure.
- Bring all your normal medications with you in their original containers and information about allergies you suffer from. Please take your normal medications (with a small sip of water) on the morning of the procedure. Exceptions to this may be warfarin or phenindione, dabigatran or one of the newer anticoagulants (NOAC's e.g. apixaban, edoxaban or rivaroxaban) or if you are a diabetic taking tablets or insulin. Please see the instructions under the medications section.
- Avoid wearing jewellery, make-up and nail varnish; your wedding ring may be left on if you wish – we will cover it with tape.
- We advise you not to bring large sums of money or valuables with you. If this is unavoidable they should be handed in for safe keeping.
- If you are just having a generator change you will report to the cardiology day ward and usually be discharged later that day.
- All patients are advised to come prepared for an overnight stay.
- We will ask you a series of questions to assess your general health and fitness to have your procedure. A doctor or nurse will ask you to reconfirm your consent. Please use this opportunity to raise any concerns you have.
- You will be fitted with a wristband with accurate details about you on it. It ensures that staff can identify you correctly and give you the right care. It is important that you do not remove it until you go home.
- Pre-procedure tests will include blood pressure, pulse, weight, heart tracing and blood tests. If necessary the upper chest will be shaved at the insertion site.
- We will provide you with a gown to change into. A small plastic tube will be inserted into a vein in your arm, this will allow us to give intravenous antibiotics before the procedure to minimise any incidence of infection.
- You will need to arrange transport home as you should not drive for at least one week after the procedure.

Medications: What to do if you are diabetic?

If your diabetes is controlled by diet / tablets:

- Don't have anything to eat for at least four hours before the procedure and anything to drink for two hours before the procedure.
- If you take tablets to control your diabetes don't take them if you are not having breakfast. You may take them later, after your procedure, with food.
- If your procedure is in the afternoon and you are having breakfast take your tablets as normal.

If you are diabetic and take insulin:

- Usually we will try to put you first on the list. We advise you not to eat any breakfast and to omit your usual morning insulin before the procedure.
- You will be offered food and your usual morning insulin after the procedure.
- However, if you are not on the morning list you will need to take half of your morning dose of mixed insulin (minimum 10 units) with breakfast.
- If you are on insulin four times a day please remember to take your morning dose.

What to do if you are on warfarin or one of the newer anticoagulants (NOAC's)

If you are on warfarin or phenindione or one of the newer anticoagulants (NOAC's e.g. apixaban, dabigatran, edoxaban or rivaroxaban)

- You must tell us if you are taking warfarin or phenindione. You will be instructed as to when to take your last dose unless you have an artificial heart valve in which case please contact us on 01902 694205.

What happens during the procedure?

The procedure is performed in a dedicated small operating theatre a short distance from the ward in the cardiac catheter suite.

- You will be taken to the operating theatre on your bed and transferred to the theatre table. This is well padded and you will be lying on your back with your head supported throughout the procedure.
- Your blood pressure and oxygen levels will also be monitored throughout the procedure.
- You will be given a sedative to help you relax during the procedure. It is normal practice to also give you oxygen, using a face mask.
- Small adhesive electrodes are attached to your body to monitor your heart rate and rhythm.
- Your upper chest wall will be swabbed with a cold antiseptic and sterile drapes will cover all but the area of insertion.
- After injecting the area with local anaesthetic a small incision is made and a pocket formed behind the skin where the pacemaker will sit.
- If you are having your generator changed at this stage the old one is removed, the leads will be tested to ensure they are in good working order. If so, a new generator will be fitted.
- The pacemaker leads are inserted down one of your main veins and are guided into the heart using x-ray screening. You may experience some extra 'bumps' in the chest at this point but they will pass. The doctor and cardiac physiologist will then perform a series of tests to make sure the electrical impulses are getting through to the heart and that the pacemaker is set correctly; some patients may notice their heart rate speeding up temporarily during the process.
- Your incision will be closed with stitches and a dressing will be applied. You may have a small drain inserted, if there is any bleeding.

What happens after the procedure?

You will return to the ward on your bed where:

- Your heart rate, blood pressure and wound site will be monitored and a repeat heart tracing performed.
- If you have had a new system, a chest x-ray may be performed either the same day or following day to check the position of the pacemaker.
- Once the sedation has worn off you may eat and drink and gently mobilise. You will be offered painkillers if your wound feels sore.
- Your pacemaker will be programmed prior to going home to suit your needs. This is done using a pacemaker programmer which transmits information to your pacemaker.
- You will be issued with a pacemaker identification card stating all the details about your device. You are advised to carry it with you at all times. If you are admitted to hospital please show this ID card or tell the medical staff you have a pacemaker implanted.

Going home advice

- Before leaving the ward, you will be given advice about wound care and removing your dressing.
- Before you go home you will be told if you need to have any stitches removed. If so, you will need to arrange for this to be done in 7- 10 days time at your G.P. practice. Your practice nurse will be able to do this for you.

Contact the Cardiac Investigations Department immediately if you notice any of the following from or around the wound site:

Inflammation or redness

- Swelling
- Pain
- Discharge
- Bleeding

These symptoms may indicate an infection which requires treatment quickly.

- It is important to take care not to stretch your arms above your head until you have had your six to eight week check at an outpatient visit. This is to prevent dislodging the leads from your heart until the tissue heals around them.

Driving

There will be some restrictions but these will vary depending on why you have had your device fitted and the type of device that has been fitted.

For a simple pacemaker you will not be able to drive for a week.

For other devices such as an ICD and CRT, please refer to the detailed leaflet/booklets you have been given by your clinician about the particular device you are having implanted. For further information and if you have any queries please speak to your clinician or contact the Driver and Vehicle Licensing Agency.

How to contact us

Cardiac Investigations Department

Wolverhampton Heart and Lung Centre
New Cross Hospital
Wolverhampton
West Midlands
WV10 0QP
Tel: 01902 694220
Monday - Friday
08.30 - 16.30

Cardiology Ward

Wolverhampton Heart and Lung Centre
New Cross Hospital
Wolverhampton
West Midlands
WV10 0QP
Tel: 01902 694330

Cardiology Day Ward & Cardiac Catheter Suite

Wolverhampton Heart and Lung Centre
New Cross Hospital
Wolverhampton
West Midlands
WV10 0QP
Tel: 01902 694270

Additional information is available from:

Wolverhampton Coronary Aftercare Support Group (WCASG)

Heart and Lung Centre,
New Cross Hospital,
Wolverhampton.
Email: ken@ktimmis.co.uk
Tel: 01902 755695 Mobile: 07889 063647
Website: www.have-a-heart.net

Patient Liaison Service (PALS)

PALS Officer
The Lodge, New Cross Hospital.
Tel: 01902 695362. Mobile: 07880 601085
Pager: 1463 (Dial 01902 307999 and ask the switchboard operator to connect you to the pager).
Email: rwh-tr.pals@nhs.net

Age Concern Wolverhampton

Discharge support service for anyone aged 50 or over, based in New Cross Hospital.
Tel: 01902 695517 or 07753 718929

British Cardiac Patient Association

15 Abbey Road
Bingham
Nottingham
NG13 8EE
Email: admin@bcpa.co.uk
National Helpline: 01223 846845
Website: www.bcpa.co.uk

British Heart Foundation

Greater London House
180 Hampstead Road
London
NW1 7AW
Tel: 0845 070 8070
Website: www.bhf.org.uk

MedicAlert®

1 Bridge Wharf, 156 Caledonian Road,
London N1 9UU.
Tel: 0800 581420.
Fax: 020 7278 0647.
Website: www.medicalert.org.uk

Identification system for people with hidden medical conditions.

There is a membership charge but as a registered charity they may be able to provide free or subsidised membership.

English

If you need information in another way like easy read or a different language please let us know.

If you need an interpreter or assistance please let us know.

Lithuanian

Jeigu norėtumėte, kad informacija jums būtų pateikta kitu būdu, pavyzdžiui, supaprastinta forma ar kita kalba, prašome mums apie tai pranešti.

Jeigu jums reikia vertėjo ar kitos pagalbos, prašome mums apie tai pranešti.

Polish

Jeżeli chcieliby Państwo otrzymać te informacje w innej postaci, na przykład w wersji łatwej do czytania lub w innym języku, prosimy powiedzieć nam o tym.

Prosimy poinformować nas również, jeżeli potrzebowaliby Państwo usługi tłumaczenia ustnego lub innej pomocy.

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਹ ਜਾਣਕਾਰੀ ਕਿਸੇ ਹੋਰ ਰੂਪ ਵਿਚ, ਜਿਵੇਂ ਪੜ੍ਹਨ ਵਿਚ ਆਸਾਨ ਰੂਪ ਜਾਂ ਕਿਸੇ ਦੂਜੀ ਭਾਸ਼ਾ ਵਿਚ, ਚਾਹੀਦੀ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

ਜੇ ਤੁਹਾਨੂੰ ਦੁਭਾਸ਼ੀਏ ਦੀ ਜਾਂ ਸਹਾਇਤਾ ਦੀ ਲੋੜ ਹੈ ਤਾਂ ਕਿਰਪਾ ਕਰਕੇ ਸਾਨੂੰ ਦੱਸੋ।

Romanian

Dacă aveți nevoie de informații în alt format, ca de exemplu caractere ușor de citit sau altă limbă, vă rugăm să ne informați.

Dacă aveți nevoie de un interpret sau de asistență, vă rugăm să ne informați.

Traditional Chinese

如果您需要以其他方式了解信息，如易读或其他语种，请告诉我们。

如果您需要口译人员或帮助，请告诉我们。