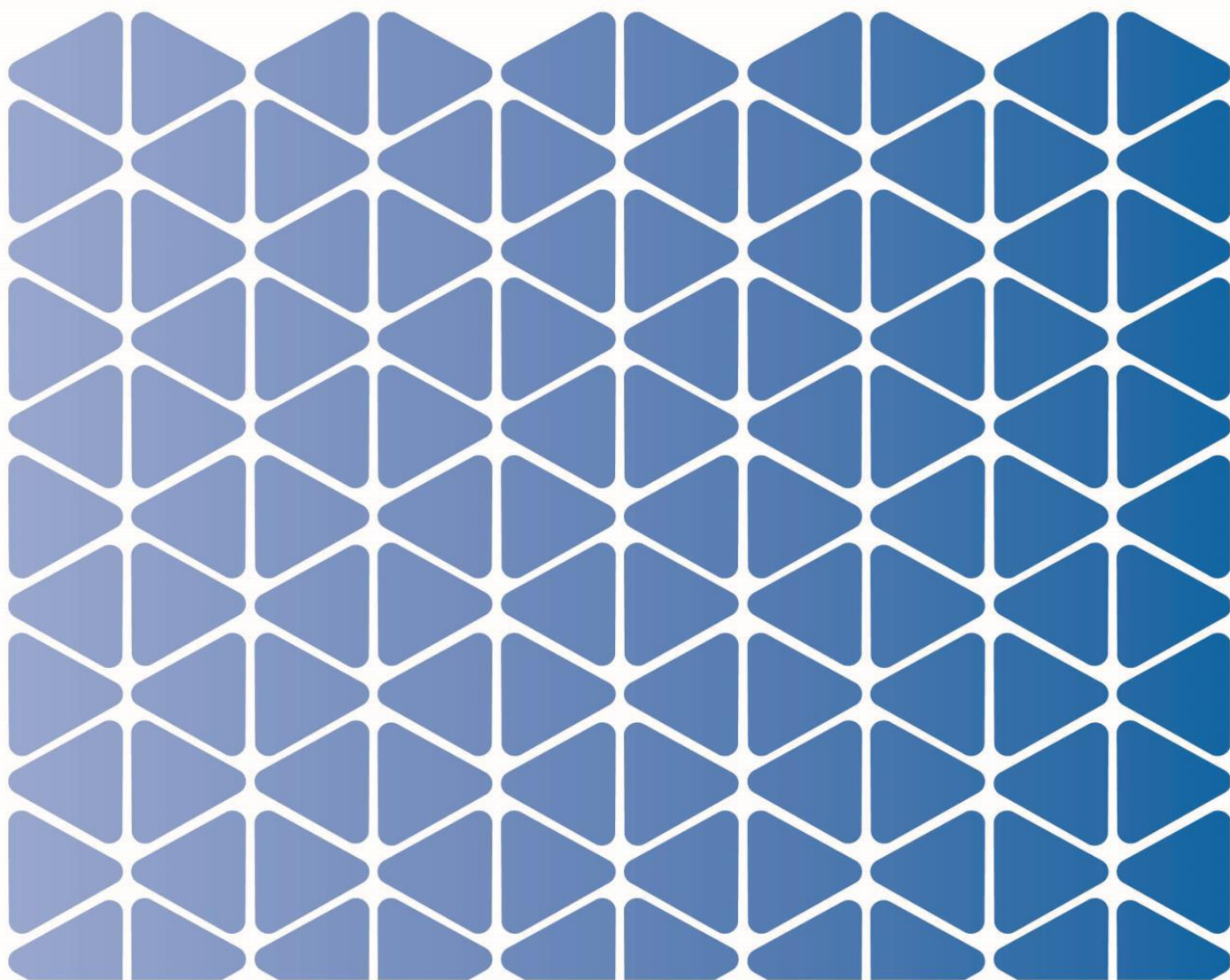


PATIENT INFORMATION

CARDIAC CATHETERISATION AND CORONARY ANGIOGRAPHY



Cardiac catheterisation and coronary angiography

It has been recommended that you have an examination of the blood vessels and chambers of your heart; this is called cardiac catheterisation. A small plastic tube (sheath) will be inserted into an artery or vein in your leg or arm and through this we will introduce a much longer fine tube (catheter), which will be passed into the heart under X-ray guidance. These catheters will be used to inject contrast fluid (sometimes referred to as “dye”) into the coronary arteries (the “fuel pipes” to the heart) to detect the presence of any narrowing or blockages in these arteries. This type of X-ray is called coronary angiography. In addition, the pressures inside your heart will be measured and contrast fluid can be injected into the heart chambers so that an X-ray image showing the pumping action of the heart can be recorded. We may change the catheter several times during each procedure as they have different shapes to help us to gain all the pictures and information needed.

The examination will determine what problems there are with your heart and allow the cardiology team to advise you of the best treatment.

This leaflet explains some of the benefits and risks of the procedure and possible alternatives if available. We want you to have an informed choice so that you can make the decision that is right for you. Please ask the cardiology team about anything you do not fully understand or want explained in more detail.

We recommend that you read this leaflet carefully. You and a member of the cardiology team will need to record your agreement to the procedure by signing a consent form, which will be given to you.

Intended benefits of the procedure

The aim of the procedure is to find out if there is narrowing or blockage of your coronary arteries or an abnormality of the chambers or valves of your heart. This information will help the cardiology team to plan and discuss with you any further treatment that may help you, for example, coronary angioplasty (stretching of a narrowing with a balloon) or surgery on your heart. In some people the procedure may show that no treatment is needed or that treatment with tablets is the best choice. Your cardiologist will discuss this with you.

Serious or frequent risks

Everything we do in life has risks. A cardiac catheterisation is considered to be a safe procedure. Occasionally complications can arise because of the test’s invasive nature. These include:

Bleeding

Bleeding from the needle puncture site can occur. This bleeding will normally stop on its own. Occasionally the bleeding is more severe and a blood transfusion may be required. Very occasionally it will be necessary to arrange a small operation to seal off the artery.

Bruising

A small amount of bruising in the groin is quite common but will disappear over a couple of weeks. Occasionally more extensive bruising occurs, spreading down the leg, but this also settles without treatment.

Infection

This is very rare but there is a tiny risk of infection at the puncture site.

Reaction to local anaesthetic or contrast fluid

There is a small risk of a reaction to the drug or contrast fluid used. This usually consists of an itchy skin rash which resolves within an hour or two, but rarely can be more severe.

Changes in heart rhythm

There is a small risk of developing an abnormal heart rhythm during the procedure. Most of these are harmless and settle on their own within a few seconds. Occasionally it is necessary for us to give a drug by injection or an electric shock to correct a persistent or dangerous change in the heart rhythm.

Heart attack or stroke

Rarely a heart attack or stroke can occur during the test. If this does happen it is often minor. It may be necessary for you to stay in hospital, usually for a few days. Rarely a heart attack can be more serious and may lead to the need for an emergency heart operation. A heart attack or stroke can also be so severe that it can cause death or leave a serious disability.

Reduced kidney function

There is a small risk that the contrast fluid used in the test could reduce kidney function. Rarely the kidneys may be damaged permanently. This risk is higher if kidney function is abnormal before the test. You may be given fluid into a vein and an alternative contrast agent used if you are thought to be at increased risk of this problem.

You will be cared for by a skilled team of doctors, nurses and other healthcare workers who are involved in this type of procedure regularly. If problems arise, we will be able to assess them and deal with them appropriately.

Other procedures that are available

There are no procedures that provide exactly the same information about your heart as a cardiac catheter and often this is the test that is needed to advise you about the best treatment options. For some patients a CT angiogram can be a non-invasive test to obtain information about narrowed heart arteries, but this is not suitable for all patients, particularly if your doctor thinks there is a high chance of the test being abnormal. Your cardiologist will discuss this with you.

Who will do the procedure?

Usually patients will be listed to have their procedure done by the consultant who normally looks after them. Not all consultants perform cardiac catheterisation, so sometimes you will be receive an appointment with a consultant you have not seen previously. There may also be occasions when an earlier appointment is available with a different consultant. If you would prefer your procedure to be done by a particular consultant, you will need to discuss this with your consultant. There are also doctors in training in cardiology who will frequently be working with your consultant, so your procedure may not always be performed by your consultant. Your consultant will always have overall charge of your care.

Before you come into hospital

Instructions for eating and drinking

It is important that you follow the instructions that we give you about eating and drinking. On the morning of your test you may drink as normal and can have a light early breakfast (7am) and then have nothing to eat until after the test.

Your usual medicines

We will usually ask you to continue with your usual medication (except as instructed below), so please bring it with you.

Warfarin

If you are taking warfarin, you may be asked to stop it before the test. Sometimes the test can be done through the artery in the wrist without stopping it. Your cardiologist should let you know whether you need to stop warfarin or continue with it.

If you are told to stop warfarin and do not have an artificial heart valve, please do not take it for 5 days before the test.

If you take warfarin and you do have an artificial heart valve please ensure your cardiologist has discussed this with you OR contact the cardiac catheter laboratory on 01905 733205 OR contact your cardiologist's secretary so that we can make special arrangements. If you need to stop warfarin, you may need treatment with heparin injections for several days before and after the test.

Warfarin Alternatives (Dabigatran/Pradaxa, Rivaroxaban/Xarelto, Apixaban/Eliquis, Edoxaban)

There are now a number of anticoagulant drugs like warfarin which might be used if you have an abnormal heart rhythm (atrial fibrillation) or have had blood clots in your lungs or legs (DVT or PE). If you are taking one of these drugs (Dabigatran, Rivaroxaban, Apixaban, Edoxaban), it may be possible to perform your test through the artery in the wrist without stopping it, and your cardiologist should have told you to do this. If you have been asked to stop the drug, please take the last dose on the morning of the day before you come to hospital.

If you are taking one of these drugs but have not been given advice about it, please contact the cardiac catheter laboratory on 01905 733205.

Restarting Warfarin or Warfarin Alternatives

You will usually be asked to restart your anticoagulant drug at your usual dose on the evening of the procedure or the following day. You will be given instructions about this after your procedure. If you are taking warfarin, you will need to have an INR test about a week later with whoever usually measures your INR.

Diabetes

If you have diabetes, you should follow the appropriate instructions below.

Diabetes treated with a special diet

- You do not need to follow any specific instructions other than those above.

Diabetes treated with tablets

- If you take metformin (glucophage) do not take it on the day of your test or on the following day. Take all your other diabetic tablets as normal. We will usually arrange your test early in the morning so that you can have some food soon afterwards.

Diabetes treated with insulin

- If you take insulin you should not take your usual dose on the morning of your test. The nurses will do regular checks on your blood sugar levels. You will be able to have a sandwich after your test. Please bring your insulin with you so that you can have your usual dose at this time.

If you have any questions or concerns about your diabetic treatment please contact whoever normally advises you about your diabetes.

What to do if you feel unwell before attending for your test

If you don't feel well and have a cough, a cold or any other illness when you are due to come into hospital for your investigation, we will need to know. Depending on your illness and how urgent your investigation is, we will advise you whether or not your procedure should be delayed.

On the day of the procedure

What you should bring with you:

- a dressing gown and slippers
- your usual medication
- something to read or to do before and after your test

Many people find it helpful to have someone with them. You may bring your partner or spouse or a close family member or friend with you, although they will not be able to stay with you all day.

You will usually be admitted to the cardiac catheter suite early on the day of your procedure so that we and you can prepare for the test. We will welcome you to the ward and check your details. We will fasten a band containing your name and hospital information around your wrist. We will ask you to change into a gown ready for your test. Prior to the examination the cardiologist who will be carrying out your examination will be available to answer any queries you may have.

During the investigation

Before the procedure you may be asked to remove spectacles, or jewellery that you may be wearing. A cardiac catheterisation is performed using a specialised X-ray machine in the cardiac catheter suite. We will ask you to lie on a couch, within the ring of the X-ray machine. Local anaesthetic will be injected into the area where we will insert the small plastic sheath into an artery or vein. This may be at the top of your leg or in your wrist or arm. This will be used to introduce the catheter that will be passed to your heart under X-ray guidance. You will not be able to feel the catheter as it is passed through your blood vessels. The injection of contrast fluid into one of the heart's main chambers causes a flushing feeling from head to toe.

You may also get a warm feeling in your pelvis and legs. This can make you feel as if you are passing urine but it is unusual for this to actually happen. Occasionally injection of contrast fluid into the coronary arteries causes chest discomfort, usually for just a few seconds. It is important to tell a member of the team straight away if you feel any pain or discomfort during or after the procedure.

A simple coronary angiogram takes 10 to 20 minutes and most procedures take less than 30 minutes. Sometimes, it takes longer to obtain all the information and pictures that are needed.

At the end of the test the catheter is removed; if the sheath is in your wrist it is usually removed immediately with a pressure band over the artery; if the sheath is in your groin it is usually taken out later. Sometimes a special plug is used to close the hole in the artery in your groin. You will be helped onto a trolley and taken back to the recovery area where a nurse will remove the remaining sheath if necessary. To prevent bleeding and to allow the artery or vein to seal itself firm pressure is applied, usually for at least 10 minutes. The exact details of the procedure needed in your case will have been explained to you by your cardiologist beforehand.

After your investigation

You will remain on a trolley usually for about an hour and a half to make sure that there is no bleeding. The nurses will make regular checks on your pulse and blood pressure. You will then be able to get up and dressed and walk around. If there is any bleeding, further pressure will be applied to the area and you will have to wait longer before getting up and about. Once everything is satisfactory you will be allowed home.

The results of the tests and any recommended further tests or treatment will be explained to you by your cardiologist before you go home.

Leaving hospital

Length of stay

Most patients having this type of test will be in hospital for most of the day, but will not need to stay overnight.

Medication when you leave hospital

Before you leave hospital, the pharmacy will give you any extra medication that you need to take when you are at home.

Convalescence

How long it takes for you to fully recover from your test varies from person to person. Most people feel no ill effects afterwards. Once you get home, it is important to rest quietly for the remainder of the day. Some people feel a slight bruised sensation where the tube was inserted. You can take a simple pain killer such as paracetamol if required. We recommend that you are not alone at home on the night after your procedure.

Puncture site

A small waterproof or gauze dressing may be placed over the puncture site after the test and can be removed when you get home or replaced if needed. You may have a small amount of bruising and mild aching, but if there is any redness, if you have swelling or pain, or if the bruising is very widespread, contact your GP (family doctor) or telephone the Cardiac Catheter Suite, Worcestershire Royal Hospital (Phone 01905 733205) for advice.

Personal hygiene

You are advised not to bathe or shower until the day after your procedure. Further advice will be given by the nursing team if necessary.

Exercise

You should not participate in strenuous exercise for 2 days after your procedure. You should avoid heavy lifting and carrying heavy shopping. Ordinary walking, for example round the house, garden or place of work should not be a problem.

Driving

You should not drive yourself home or travel home by public transport. You should not drive for 24 hours after your procedure. That is one reason why we recommend that your partner or spouse or a close family member or friend comes with you (and takes you home by car or taxi).

Work

When you return to work will depend on your job. If your job involves heavy manual work you may be advised to take a few days off. If your job does not include manual work or lifting you may be able to return to work 1-2 days after the test.

Test results

We will usually explain the results and any recommendations about your treatment to you before you leave the hospital. Many people find it helpful to have someone with them when their results are explained; that is another reason why we recommend that your partner or spouse or a close family member or friend comes with you.

A full report will be sent to your doctor (GP).

Contact details

If you have any specific concerns that you feel have not been answered and need explaining please contact the following.

- Nursing team, Cardiac Catheter Suite, Worcestershire Royal Hospital, Mon-Fri 7.30am to 8pm (Phone 01905 733205)
- For urgent advice at other times: the Coronary Care Unit, Worcestershire Royal Hospital (01905 760561)
- For urgent advice at other times: the Coronary Care Unit, Alexandra Hospital, Redditch (01527 512089)
- For routine advice, please also contact your consultant's secretary in office hours.

Additional Information

The following internet websites contain additional information that you may find useful:

www.worcestershirehealth.nhs.uk/acute_trust

Worcestershire Acute Hospitals Trust

www.patient.co.uk

Information fact sheets on health and disease

www.nhsdirect.nhs.uk

On-line Health Encyclopaedia and Best Treatments website

www.bhf.org.uk

British Heart Foundation Website

If your symptoms or condition worsens, or if you are concerned about anything, please call your GP, 111, or 999.

Patient Experience

We know that being admitted to hospital can be a difficult and unsettling time for you and your loved ones. If you have any questions or concerns, please do speak with a member of staff on the ward or in the relevant department who will do their best to answer your questions and reassure you.

Feedback

Feedback is really important and useful to us – it can tell us where we are working well and where improvements can be made. There are lots of ways you can share your experience with us including completing our Friends and Family Test – cards are available and can be posted on all wards, departments and clinics at our hospitals. We value your comments and feedback and thank you for taking the time to share this with us.

Patient Advice and Liaison Service (PALS)

If you have any concerns or questions about your care, we advise you to talk with the nurse in charge or the department manager in the first instance as they are best placed to answer any questions or resolve concerns quickly. If the relevant member of staff is unable to help resolve your concern, you can contact the PALS Team. We offer informal help, advice or support about any aspect of hospital services & experiences.

Our PALS team will liaise with the various departments in our hospitals on your behalf, if you feel unable to do so, to resolve your problems and where appropriate refer to outside help.

If you are still unhappy you can contact the Complaints Department, who can investigate your concerns. You can make a complaint orally, electronically or in writing and we can advise and guide you through the complaints procedure.

How to contact PALS:

Telephone Patient Services: 0300 123 1732 or via email at: wah-tr.PALS@nhs.net

Opening times:

The PALS telephone lines are open Monday to Friday from 8.30am to 4.00pm. Please be aware that you may need to leave a voicemail message, but we aim to return your call within one working day.

If you are unable to understand this leaflet, please communicate with a member of staff.