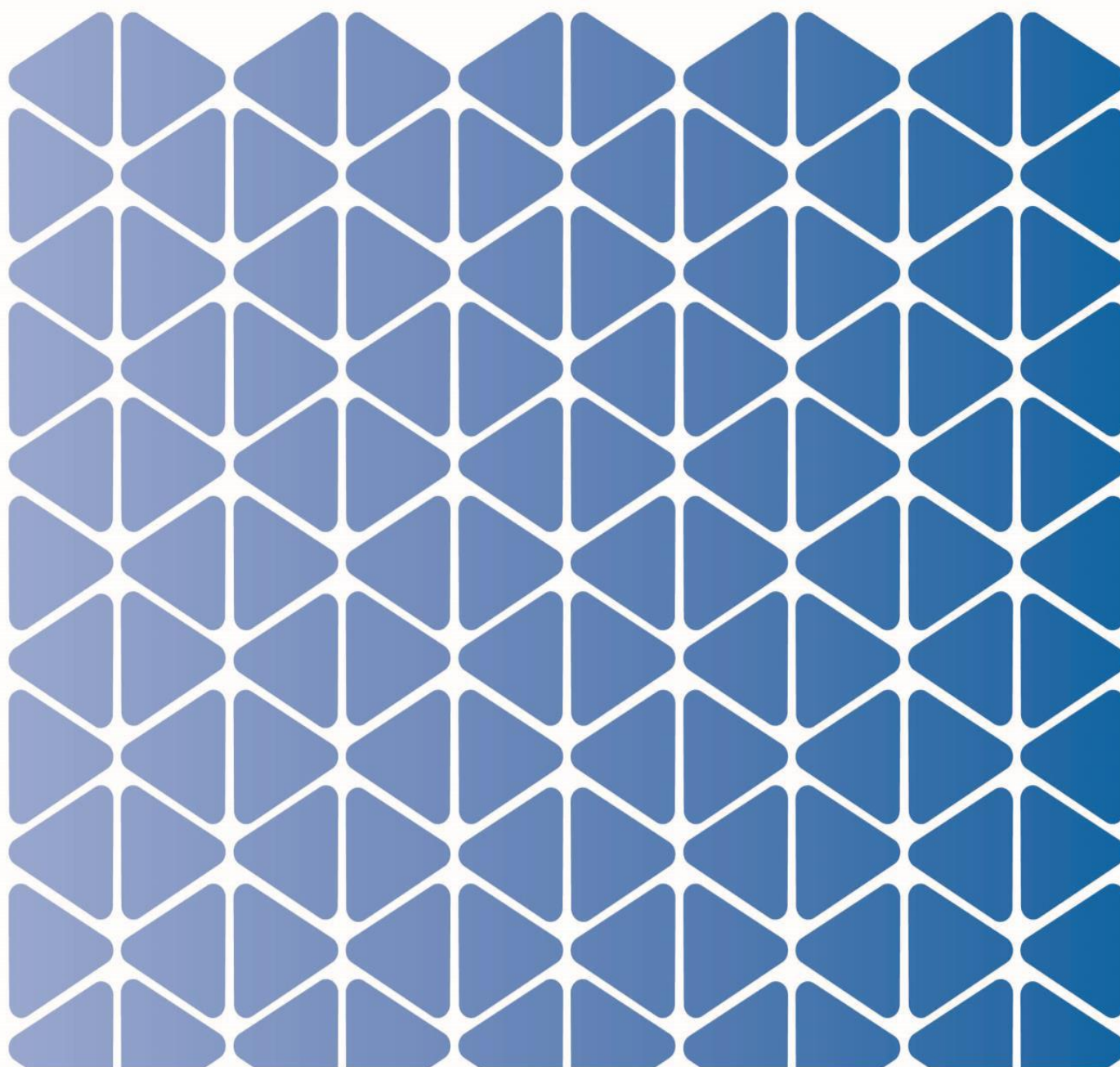


PATIENT INFORMATION

PERCUTANEOUS BIOPSY OF LUNG (CT GUIDED)



Imaging Department
Investigative procedure information leaflet
Percutaneous biopsy of lung (CT guided)

It has been recommended that you have a biopsy of your lung using CT (computerised tomography, which is a specialised form of X-ray) guidance. A biopsy is when a small sample of tissue is taken from a part of the body, the sample will then be processed and examined under a microscope or may be tested in other ways. The examination will help determine what problems (if any) there are with your lung and allow your doctor or consultant to advise you of the best treatment. Percutaneous simply means through a small hole (often no more than a needle puncture) in the skin rather than having to make a large incision.

A CT scan is performed using a specialised machine which looks like a large circular ring through which a moving table passes, on which the patient lies. Within the ring of the scanner there is a source of X-rays and on the opposite side of the ring is an X-ray detector. During the procedure you will be asked to lie on the CT table, which will then be moved slowly through the ring until the part of the body to be scanned is between the X-ray source and the X-ray detector. Thin beams of X-rays are passed through your body. Images (pictures) are then produced depending on the density of the tissues of your body. The cross-sectional images are used to locate precisely the area to take the biopsy and the best approach to make.

Using the images which are shown on a television screen, a needle will be inserted through your skin, into your lung and samples will then be taken. Your skin will be cleaned with antiseptic solution and local anaesthetic injected into a small area of skin and the surrounding tissues to minimise the discomfort associated with the procedure. You should not feel any pain; however, you may feel some pressure as the needle is inserted. You may be asked to hold your breath for 5-10 seconds whilst the needle is inserted.

Some techniques use a needle which produces a loud click when the sample is taken. As the needle comes out it brings with it a small sample of tissue.

This leaflet explains some of the benefits, risks and alternatives to the procedure, to help you make the best, informed decision as to your treatment. Please ask your radiological team about anything you do not fully understand or want to be explained in more detail.

We recommend that you read this leaflet carefully. You and your doctor (or other appropriate health professional) will also need to record that you agree to have the procedure by signing a consent form. Your doctor or health professional will give you this form on the day or you may already have received it through the post with this leaflet. Please sign it if you are satisfied with the explanations and bring it with you when you attend for your biopsy.

Intended benefits of the procedure

The aim of the procedure is help determine if there is an abnormality by obtaining a sample of tissue for laboratory examination, and allow your doctor or consultant to advise you of the best treatment. You need to be aware that there is a small chance that the result could come inconclusive, meaning no diagnosis. Your referring Doctor will be in touch should this be the case.

Serious or frequent risks

Your doctor has recommended that you have this procedure undertaken to help in your continuing treatment, in so doing they have balanced the benefits against any potential risks associated with it

Percutaneous biopsy is considered to be a safe procedure, but occasionally complications can arise because of the test's invasive nature.

These include:

- **Bleeding**

Internal bleeding from the 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. Some blood may be coughed up in your phlegm during or following the procedure for 2-3 days.

- **Haemothorax** - Rarely it may bleed along the lung capsule which might need drainage.

- **Haemoptysis**

You might cough out blood during the procedure or later which is expected. If the bleeding is significant, we might consider admitting you or transfuse blood.

- **Pneumothorax (collapse of lung)**

There is a small risk of the needle resulting in a collapse of the lung. In most patients in which this happens, the amount of air that has escaped from the lung is small and is reabsorbed by the body over a few hours. If the air leak is large or persistent a tube called a chest drain will need to be inserted.

- **Infection**

There is a small risk of infection.

- **Discomfort**

- **Reaction to local anaesthetic**

There is a small risk of a reaction to the drug used.

- **Accidental injury to other organs**

There is a small risk of injury to other organs. This risk of this complication is substantially reduced by the use of the CT guidance

- **Inadequate sampling**

We might have to repeat the procedure in the near future if the samples are non-diagnostic or inadequate for all tests.

- **Death**

Rare

CT scanning involves the use of X-rays. This investigation involves exposure to x-rays. X-rays consist of a type of radiation known as ionising radiation. X-Rays can have harmful effects on living cells and the radiation dose per examination is limited to a level which is as low as is reasonably practicable and therefore the associated risks are minimal. The radiologist / radiographer is responsible for making sure that the dose is kept as low as possible and that the benefits of having the x-ray outweigh any risk. Patients who are or might be pregnant must inform a member of staff in advance.

Many CT examinations involve you having a contrast medium (a liquid 'dye' which shows up on x-ray) injected into a vein in order to increase the amount of information obtained from the scan. The injection usually causes nothing more than a warm feeling passing around your body. There is a slight risk of an allergic reaction to the injection, such as a skin rash, but it may lead to an asthmatic attack or other significant complication. The doctors in the radiology department are trained to deal with any complications and again the risk involved is very small. If you had a reaction to a previous injection of contrast media for a previous CT / Radiology exam scan you should tell the radiographer at the time of your examination.

You will be cared for by a skilled team of doctors, nurses and other healthcare workers who are involved in this type of procedure every day. If problems arise, we will be able to assess them and deal with them appropriately. As with all invasive procedures, there is a very small risk that you may die from complications of the procedure.

Please let the Imaging Department know before attending for your procedure:

- If you are taking any of the drugs mentioned below
- If you have any allergies.

Other procedures that are available

You may have already had a bronchoscopy which looks at the main airways. There are alternative procedures which would obtain a sample from the lung itself, but this is the least invasive.

The alternative procedures which would obtain a sample are to undergo surgery with lung resection or mini-thoracotomy. Your doctor can discuss this with you.

Your anaesthesia

Local anaesthetic will be injected to help ensure that you are comfortable during the procedure.

Preparation for your procedure

You will be admitted onto a ward before being transferred to x-ray department.

You can eat and drink normally.

You will need to have a blood coagulation test carried out before the biopsy. You will be informed of the arrangements for this test.

You can usually continue with your normal medication before your procedure, except those listed below in which case please inform your doctor and the radiology department. Please bring any medication you take with you, particularly if you are to be admitted.

Your normal medication

We will usually ask you to continue with your normal medication (except as instructed below) during your stay in hospital, so please bring it with you.

Aspirin/Dipyridamole

If you are taking these medicines regularly, please stop 5 days before the biopsy unless you have a high risk indication. e.g. have had a cardiac stent inserted within the last twelve months.

Clopidogrel, Prasugrel, Persantin, Clexane,

If you are taking any of these regularly, please ring the Imaging department on the numbers provided below.

We will need to know why you are taking this medication and discuss this with you. You will need to stop taking these prior to your procedure, but this should only be done after discussion with the Referring Clinician.

Warfarin, Dabigatran, Rivaroxaban, Edoxaban, Apixaban

If you are taking any of the above, it may need to be stopped prior to the procedure and alternative medication should be arranged with your referring Clinician. Please ring the booking coordinator on 01527 503030 asking for extension 44603. We will need to know why you are taking this and what your target INR is.

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, your procedure may need to be delayed.

On the day of the procedure

You will be admitted on to a ward. Before being transferred to radiology you will be asked to put on a hospital gown. A small cannula (thin tube) will be placed into a vein in your arm so that the radiologist can give you a sedative or painkillers during the procedure, if required.

Prior to the examination the Radiologist who will be carrying out your procedure will be available to answer any queries you may have. Please let us know in advance if you are allergic to any antibiotics or other drugs.

During the procedure

You will be cared for by a skilled team of doctors, nurses and other healthcare workers who are involved in this type of procedure every day. If problems arise, we will be able to assess them and deal with them appropriately. As with all invasive procedures, there is a very small risk that you may die from complications of the procedure.

After your procedure

Following the procedure, you will usually be admitted for observation for a period of 4 to 6 hours. You will be looked after by nursing staff on the ward who will carry out routine observations including pulse and blood pressure and will also check the biopsy site. You will be discharged by a doctor once you have recovered.

A chest X-Ray will be obtained after one hour to rule out a pneumothorax requiring treatment.

Leaving hospital

Length of stay

Most patients having this type of test will be in hospital for 4 – 6 hours post biopsy.

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 biopsy varies from person to person. It can take one to two days.

Once home, it is important to rest quietly for the remainder of the day.

If you have any of the following, please contact your doctor.

- breathlessness
- excessive bleeding from the biopsy site;
- experience excessive sweating;
- experience excessive shivering; or
- generally feel unwell.
- increasing pain

Wound

A small waterproof dressing will be placed over the site after the test and can be replaced if needed.

Personal hygiene

You will normally bathe or shower as normal after you leave hospital.

Diet

You don't usually need to follow a special diet. If you need to change what you eat, we will give you advice before you go home.

Exercise

You should not participate in strenuous sports for the first 10 days after your biopsy. You should avoid heavy lifting and carrying heavy shopping.

Driving

You should not drive until you feel confident that you could perform an emergency stop without discomfort. It is your responsibility to check with your insurance company.

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 week off. If your job does not include manual work or lifting you may be able to return to work 2 days after the biopsy.

Test results

We will normally send the samples to a special laboratory in the hospital for tests. The results will not be available on the day of the examination. They will be sent to your referring consultant who will usually either write to you or arrange an outpatient appointment.

Additional Information

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

- www.worcsacute.nhs.uk
Worcestershire Acute Hospitals NHS Trust
- www.patient.info
Information fact sheets on health and disease.
- www.radiologyinfo.org
For information on a wide range of radiological procedures.
- www.nhs.uk
On-line Health Encyclopaedia and Best Treatments Website.
- www.bsir.org
British Society of Interventional Radiology – patient information

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.