

## Radiology

# Lung biopsy

Other tests that you have had performed, such as a chest X-ray or CT scan, will have shown that there is an abnormal area inside your lung. Your doctor will have discussed this with the radiologist (a doctor who specialises in X-rays and scans) and recommended a lung biopsy to help find out the cause of the abnormal area.

This leaflet will help you understand why you need a lung biopsy, what is involved and what possible risks there may be with this procedure. It may not answer all your questions so if you have any concerns, please do not hesitate to contact us using the numbers at the end of this leaflet.

If you feel unhappy with any part of your care within the X-ray Department, please ask to speak to a senior member of staff.

Please read this leaflet carefully to make you are fully prepared for the examination.

Please contact the X-ray Department if your weight is equal to or more than 203kg (32 stone). You may require an alternative examination.

## What is a lung biopsy?

A lung biopsy is a procedure where a small piece of lung tissue is removed and sent to the laboratory. It will be examined under a microscope by a pathologist (a doctor who specialises in making a diagnosis from tissue samples) to check for abnormal cells. This method of taking a biopsy is sometimes referred to as a percutaneous biopsy.



## Patient Information

After an injection of a local anaesthetic to numb the area, a tiny cut or incision will be made to pass a special thin needle through the skin on your chest or back. You may feel a pushing sensation, but this should not be painful and will only last for a few minutes. A small piece of lung tissue is removed and then sent to a pathologist, who will examine it under a microscope.

The examination will be performed by a radiologist who may be assisted by a radiographer and a radiology nurse or radiology department assistant. It is not always easy to predict how complex or straightforward the procedure will be and therefore how long it could take. As a guide, expect to be in the Radiology Department for about 45 minutes to one hour. However, much of this time is taken up with preparation.

The biopsy will take place in the Radiology Department. The procedure is undertaken in the CT scanner. Occasionally it is undertaken in the ultrasound room. This depends on where the abnormal area is and if it is close to the chest wall.

### **What is a CT scan?**

A CT scan is an examination that uses X-rays to produce detailed images of the body. It gives much more information than a single X-ray image. It produces detailed cross-sectional images of the organs and blood vessels in your body.

### **What is an ultrasound?**

An ultrasound scan is an examination that uses sound waves through a probe to show pictures of part of the inside of the body. A probe is covered in jelly and moved across your skin to get the images required.

### **Preparation for the lung biopsy**

- If you are taking any blood thinning drugs such as warfarin, clopidogrel, aspirin, or if you are aware that you may have bleeding problems, please notify us as soon as you have received your appointment, so that the radiologist who will be performing your examination can be notified. They will need to discuss this with your hospital consultant before your appointment can be confirmed. Your medication may need to be stopped before the procedure.

## Patient Information

- You will need to have a blood test performed 4-5 days before your investigation, to check that you do not have an increased risk of bleeding.
- You may need to be given Vitamin K before the procedure if your blood clotting ability is lower than desired, or the procedure may be postponed until your clotting ability has improved.
- You may have a light early breakfast on the day of your appointment. Please do not eat or drink anything for 4 hours before your appointment - you may have small sips of water only.
- If you are **diabetic**, please take all your medications in the usual manner and make sure all staff are aware of your condition.
- A doctor will explain the procedure to you and ask you to sign a pink consent form to say you are prepared for the test to go ahead.
- You will usually be admitted for the procedure – this is where you will stay before and after the procedure until you are ready to be discharged.
- You need to make your own travel arrangements to and from the hospital.
- If you require an ambulance, you will need to arrange it with your own GP.
- Please bring any sprays or inhalers that you are taking with you to hospital.
- Please do not bring any valuable possessions with you.
- When on the ward, you will be asked to wear a hospital gown.
- You may need to have a cannula (a small plastic needle) inserted into a vein in your arm to administer medication if needed.

## Referral and consent

The biopsy is normally done as a planned procedure, and you should have plenty of time to discuss the procedure with your doctor and the Radiologist who will be performing the procedure.

In rare cases, a biopsy may be performed as an emergency and there may be less time for discussion. You should still have had enough explanation before you sign the consent form. If after discussion with your hospital doctor or radiologist you do not want the procedure carried out, then you can decide against it.

## Patient Information

You will be asked to sign a pink consent form confirming that you understand the procedure and are aware of the risks and benefits of it.

If the radiologist feels that your condition has changed or that your symptoms do not suggest this procedure is needed, they will explain this to you and communicate with the referring doctor who will review your situation as soon as possible. At all times the radiologist and referring doctor will be acting in your best interests.

### During the procedure

- The procedure will be explained to you again by the radiologist. You will be able to ask any further questions that you may have.
- You will be asked to lie on the examination table in the position that the radiologist has decided is most suitable. This will depend on the area within the lung that is to be biopsied. It is important that you stay very still in this position until the procedure is over. If you are uncomfortable, please let the doctor know.
- The CT scanner or ultrasound machine will be used to decide on the most suitable place for inserting the biopsy needle. This area may be marked with a pen or metal clip secured to your chest with tape.
- Everything will be kept sterile and the radiologist will wear sterile gloves. Your skin will be cleaned with cold antiseptic solution and sterile drapes placed over this area. Your skin will be numbed with local anaesthetic. When the local anaesthetic is injected, it will sting to start with, but this soon wears off and the skin and deeper tissues should then feel numb.
- The radiologist will insert the thin biopsy needle whilst looking at the images on the ultrasound or X-ray machine to make sure it is accurately positioned. You may be aware of a pushing sensation as the needle is positioned, but this is generally done so quickly that it does not cause much discomfort.
- If the procedure does become painful, you should tell the radiologist performing the biopsy, and they may give you more local anaesthetic.
- The first part of the procedure when the equipment is being prepared may seem to take a while but doing the biopsy itself does not take very long at all. Once in place, the needle often makes a clicking noise when the biopsy is taken - this should not alarm you. The radiologist may need to take 2 or 3 samples.
- When the procedure is finished, a small plaster will be placed to cover the incision, and you will be returned to the ward.

### **What happens afterwards?**

- Nurses on the ward or day unit will carry out routine observations such as taking your pulse and blood pressure to make sure that there are no problems.
- You will be asked to stay in bed for a few hours until you have recovered.
- You may have a chest X-ray before you go home to make sure there are no complications.
- You should drink plenty of fluids and eat normally.
- If you have any concerns after the procedure, please speak to the staff on the ward.
- If all is well, you will be allowed home the same day, about 6 hours after the biopsy.

### **What are the risks of the procedure?**

- A lung biopsy is generally a very safe procedure and may save you from having a larger operation. There are a few risks and complications that can arise, as with any medical treatment, but they are generally minor and do not happen very often. They will be discussed with you before you sign the consent form.
- After the biopsy, some patients may cough up a little blood - this is generally very uncommon.
- Occasionally, air can get into the space around the lung. This usually requires no treatment other than observation in hospital. However, sometimes it may cause the lung to collapse. If this happens the air will need to be drained, either with a needle or a small drainage tube inserted through the skin. You may need to stay in hospital a little longer.
- There may be soreness around the biopsy site and some bruising.
- In very rare cases, there can be bleeding into the lung requiring emergency treatment.

X-rays are a type of radiation. We are all exposed to natural background radiation - this comes from the sun, food we eat and the ground. Exposure to X-rays carries a small risk, but the doctor feels that this risk is outweighed by the benefits of having the test. We will take all precautions to minimise the amount of X-rays you receive.

## Patient Information

At all times during and after the procedure, the staff will be monitoring your responses to this investigation to minimise the effects of any complications.

Unfortunately, not all biopsies are successful. This may be because the piece of tissue which has been taken is normal tissue rather than abnormal, despite taking every possible care. Also, although abnormal tissue has been obtained, it may not be enough for the pathologist to make a definite diagnosis. If you need any further investigations, they will be discussed with you in clinic.

## Safety

### **All patients aged 12-55 years – could you be pregnant?**

The risks of radiation are slightly higher for the unborn child so you will be asked to confirm that you are not pregnant before the examination can proceed.

## How do I get the results?

The results from your lung biopsy usually take 7-10 days, and during this time they will be discussed at the Lung Team's meeting. You will then receive an appointment to see your consultant so that the results can be discussed with you.

## Other sources of information

**For information about the effects of X rays and information about radiology departments visit the NHS website:**

<https://www.nhs.uk/conditions/x-ray/>

Please note that the views expressed in these websites do not necessarily reflect the views of UHCW NHS Trust or the NHS.

## Patient Information

### Useful telephone numbers

<b>University Hospital</b>	Switchboard: 024 7696 4000
<b>Lung Support Nurses</b>	Direct Line: 024 7696 5505
<b>Ward 50A Day Unit</b>	Direct Line: 024 7696 7703
<b>Radiology Day Case Unit</b>	Direct Line: 024 7696 7115

The Trust has access to interpreting and translation services. If you need this information in another language or format, please contact the Lung Support Nurses on 024 7696 5505 and we will do our best to meet your needs.

The Trust operates a smoke free policy.

### Did we get it right?

We would like you to tell us what you think about our services. This helps us make further improvements and recognise members of staff who provide a good service.

Have your say. Scan the QR code or visit:

[www.uhcw.nhs.uk/feedback](http://www.uhcw.nhs.uk/feedback)



#### Document History

Department:	Radiology
Contact:	27161
Updated:	February 2023
Review:	February 2025
Version:	8
Reference:	HIC/LFT/114/06