

CT (Computed Tomography) guided lung/pleural biopsy

If you do not believe you should have been referred for this procedure, please contact the CT department immediately

Introduction

This leaflet gives you information about having a Computed Tomography (CT) guided lung/pleural biopsy. It explains how the procedure is carried out and some of the possible complications.

Why do I need a biopsy?

Previous imaging you have had has shown an abnormal area in your chest. It is not possible to say exactly what the abnormality is and the best way to find out is to take a small piece of tissue (biopsy) and examine it under a microscope.

Where will the biopsy be done and who will carry it out?

The biopsy will be done in a CT scanner in the Radiology Department.



Figure 1: CT scanner

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Department

Radiology

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March 2027

Patient Information

A radiologist (a doctor who specialises in reading diagnostic images such as X-rays and CT scans) will carry out the biopsy. They will be assisted by a radiology nurse and a radiographer who will take the images.

How do I prepare for the biopsy?

Before your biopsy a pre-assessment conversation is required for you to discuss the procedure and any preparation that may be needed. This might be over the phone or you may be sent an appointment to attend a clinic in the hospital. Please have a list of all your medications available for this discussion.

You will need a blood test before your biopsy. This is to check that you do not have an increased risk of bleeding following the biopsy. The pre-assessment nurse will discuss this with you.

On the day of your procedure, please do not eat anything for 6 hours before your appointment. You may drink clear fluids during this time but please stop these 2 hours before your appointment.

Some blood-thinning medications may need to be stopped before the biopsy (we will let you know if this is the case for you) but please continue to take any pain or blood pressure medication as normal.

Report to the area stated on your appointment letter (this may be the Radiology/Imaging department or a Ward), where you will be asked to change into a hospital gown.

Although most people go home on the same day there is a possibility that you may need to stay in hospital overnight, so please bring an overnight bag with you.

You will not be able to drive after the procedure and will need to arrange transport home.

Can I bring a relative/friend?

Yes, but for reasons of safety they cannot join you in the CT scanning room except in special circumstances.

**Patient
Information**

Giving your consent (permission)

We want to involve you in the decision about your care and treatment. The radiologist will explain the procedure and risks to you and give you the opportunity to ask questions. If you decide to go ahead with the biopsy you will be asked to sign a consent form. This states that you agree to the procedure and understand what it involves.

If you decide you do not want this procedure you can change your mind at any time, even after signing the consent form.

The Radiology Department plays an important role in the training of future healthcare professionals. The part patients play in this is vital in ensuring we produce the right quality of healthcare professionals for the future. If at any time you would prefer not to have students present, please inform the team looking after you. This will not affect your care in any way.

What happens during the procedure?

You will be taken into the scanning room and made comfortable on the bed. You may be asked to lie on your back, side or front. This is dependent on where the biopsy is to be taken from so it is important for you make sure you are as comfortable as possible before the radiologist starts. You will need to lie as still as possible during the procedure.

A scan will be taken of the relevant area to locate the exact position for the insertion of the biopsy needle. The skin over the area will be cleaned with antiseptic and then numbed using a local anaesthetic before the biopsy needle is inserted and the tissue sample taken. You may be asked to hold your breath during the procedure so it is important that you take the same 'depth' of breath each time.

After the biopsy, the area will be cleaned and a dressing put over the wound site.

Will the procedure be uncomfortable?

The biopsy is performed under local anaesthetic which will sting and you may feel some pressure as the doctor pushes on the needle. Most people do not feel much pain during the biopsy.

**Patient
Information**

What are the risks involved?

A biopsy is a safe procedure but complications can sometimes arise.

- The main risk is of causing an air leak (pneumothorax) into the space around the lung. A small air leak is common and usually does not cause any problems and gets better on its own. Large air leaks are much less common. If this happens then the air will need to be drained through a tube inserted through the skin and you will need to stay in hospital overnight.
- Some patients cough up a small quantity of blood. This is nothing to be alarmed about and will not prevent you from going home.
- Other rare complications of lung biopsy include severe bleeding/haemorrhage or infection which may require admission into hospital.
- You may notice a small amount of bruising around the wound site due to bleeding into the skin.
- If the sample taken does not provide a diagnosis the procedure may need to be repeated at a later date.

CT scanning does involve X-rays and has the usual risks associated with ionising radiation. The amount of radiation is equal to the natural radiation we all receive from the atmosphere over a period of about 3 years.

How long will the procedure take?

The procedure usually takes around 30 minutes but varies depending on each individual. However, following the biopsy you will need to remain in the department for 2 hours.

A chest X-ray is usually performed before you are able to go home. You may have to wait longer in the department and have a repeat chest X-ray if you develop a pneumothorax or feel unwell.

Patient Information

What happens after the procedure?

After the biopsy you will be looked after in the recovery area by a radiology nurse who will monitor your blood pressure, pulse, temperature and oxygen levels at regular intervals. They will advise you when you are able to get up and move around.

You must have an adult to take you home and stay with you for 24 hours following the biopsy. You should avoid heavy lifting, exercise or straining for 24 hours. If you have any pain, you may take a mild pain relief such as paracetamol. You should not drive for 24 hours following the procedure.

You should not travel by air for 6 weeks after a lung biopsy.

Are there any side effects?

Not usually. You should spend the remainder of the day resting. If you notice any bleeding from the site or feel unwell, please contact your GP immediately.

If you experience severe chest pain, shortness of breath or cough up large volumes of blood you should go to the Emergency Department immediately.

Do I have to have this? Is there an alternative?

You do not have to have a biopsy. It is possible just to monitor the abnormality with scans but this risks the abnormality growing or spreading and might delay treatment which may lead to worse outcomes.

Often there is no other more safely accessible tissue to target which limits alternative options.

Overall, the risks of leaving the abnormality un-diagnosed and un-treated is felt to far outweigh the smaller risks of a procedural complication.

Can I eat and drink afterwards?

Yes, do so normally.

**Patient
Information****When will I get the results?**

The biopsy samples will be sent to the lab on the day of your visit and over the several days, will be processed and analysed. The results will be sent to your referring doctor.

Should I still take my regular medication?

Yes, but you will need to stop any blood thinning tablets. These include; aspirin, clopidogrel, warfarin, NOACs (apixaban, rivaroxaban, dabigatran) fondaparinux. If you take any of these you will be asked to stop them before your biopsy. How long in advance will depend on the type of blood-thinner.

It is important to keep taking blood-pressure and regular pain medications as normal.

Checklist

If you are taking 'blood thinning' medication telephone our nurses to know when to stop and restart them.

Do not drive for the rest of the day. Ideally have someone pick you up after the procedure. Alternatively, get a taxi home but avoid public transport.

Cancelling your appointment

If you are unable to attend your appointment, we would be grateful if you could contact us as soon as possible. We can then offer your appointment to another patient and arrange another date and time for you.

If you have had diarrhoea and vomiting (D & V), please cancel your appointment unless you have been free of symptoms for 48 hours.

**Patient
Information**

Notes

Hopefully this booklet has answered any questions you may have, but remember this is only the starting point for discussion about your treatment. Make sure you are satisfied that you have received enough information about the procedure in advance. Please feel free to contact your consultant or the Radiology department to discuss any queries you have before the procedure.

This section is designed for you to make notes about anything you would like to ask during these discussions.

**Patient
Information****Contact information**

Please ring the CT Appointments Officer on the number shown on your appointment letter, between 9:00am and 4:30pm, Monday to Friday.

If you do not believe you should have been referred for this procedure, please contact the CT department immediately.

Alternatively, you can contact your consultant's secretary or one of the Cancer Nurse Specialists.

**Cancer Nurse Specialist
Cheltenham General Hospital**
Tel: 0300 422 2379

Gloucestershire Royal Hospital
Tel: 0300 422 2222 and ask for the operator when prompted.
When the operator responds ask them to bleep 2649.

We are pleased that we can offer state of the art technology for diagnosis. However, radiology equipment needs constant updating and there is a charitable fund for this. If you would like to make a donation, please send a cheque to the appropriate address below. Cheques are payable to GHNHSFT.

Please send your donation to:
Business Manager
Dept of Radiology (Imaging 1)
Gloucestershire Royal Hospital
London Road
Gloucester
GL1 3NN

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Making a choice

Shared Decision Making

If you are asked to make a choice, you may have lots of questions that you want to ask. You may also want to talk over your options with your family or friends. It can help to write a list of the questions you want answered and take it to your appointment.



Ask 3 Questions

To begin with, try to make sure you get the answers to three key questions if you are asked to make a choice about your healthcare.

1. What are my options?
2. What are the pros and cons of each option for me?
3. How do I get support to help me make a decision that is right for me?

These resources have been adapted with kind permission from the MAGIC Programme, supported by the Health Foundation

* Ask 3 Questions is based on Shepherd HL, et al. Three questions that patients can ask to improve the quality of information physicians give about treatment options: A cross-over trial. Patient Education and Counselling, 2011;84: 379-85



<https://aqua.nhs.uk/resources/shared-decision-making-case-studies/>