

Lung Biopsy – Image guided

Information for patients

This leaflet explains lung biopsies. It covers what to expect, including the benefits, the potential risks and the alternatives.

Before the biopsy, a clinical staff member will explain the procedure to you in detail. This leaflet is not meant to replace that discussion. If you have any questions or concerns, please do not hesitate to talk to the doctors or nurses who are caring for you. It is important that you feel well informed before agreeing to the biopsy and signing the consent form.

Confirming your identity

Before you have a treatment or procedure, our staff will ask you your name and date of birth and check your ID band. If you do not have an ID band we will also ask you to confirm your address. If we do not ask these questions, then please ask us to check. Ensuring your safety is our primary concern.

What is a lung biopsy?

It is a procedure where we take a small sample of tissue (biopsy) from your lung using a special needle. The tissue is then carefully examined under a microscope to identify the cause of your lung condition. We only take a tiny piece of tissue, about half the size of a matchstick, and it will not affect how your lung works.

Image guided means that we will use images from an ultrasound or CT scan machine to guide the needle to ensure the sample is taken from the correct place.

Why do I need a lung biopsy?

You usually have a biopsy because we have found an abnormality – often described as a shadow, nodule or lesion – on your chest x-ray or CT scan. The biopsy will help your doctor to make the correct diagnosis.

What are the risks of having a biopsy?

All medical and surgical procedures can cause complications, even though every effort is made to prevent them.

There are no problems with the vast majority of lung biopsies. Although the risks are small, your healthcare team will discuss them with you and they will answer any

questions you have. These are some of the problems which you may have during and after a lung biopsy.

- **Pneumothorax:** There is a small risk that air will leak out of your lung when you have the biopsy. This happens to about 20% of patients. You are likely to be completely unaware that this has happened. A few patients feel short of breath, cough or have chest pain. In most cases you do not need any treatment but we will monitor you for up to four hours after your biopsy. In about 10% of pneumothorax cases, too much air leaks out and we may need to admit you to hospital for treatment, which involves putting a drain (a thin plastic tube) into your chest.
- **Bleeding:** There is a small risk of bleeding and you may cough up some blood immediately after your biopsy or in the few days after your procedure. This usually stops by itself. About 5% of patients cough up a small amount of blood after a biopsy.
- **Procedure failure:** The biopsy may be unsuccessful for several reasons. If this happens, the team will review your case and decide what steps to take. Rarely, after the tissue sample has been looked at, you may need to have another biopsy to take more samples. We will discuss this with you.
- **Radiation exposure:** You will have your lung biopsy using computerised tomography (CT) guidance. This involves a dose of radiation that is about the same as a CT scan of your abdomen.

What are the benefits?

It allows us to diagnose your lung condition so your medical team can give you the appropriate advice and treatment.

Are there any alternatives?

It is possible to have a biopsy by passing a tube through your nose or mouth and down into your lungs. This is called bronchoscopy. We can sometimes get a sample this way if the abnormality is close to the centre of your chest.

If no other method is possible, we might consider doing a surgical lung biopsy. You have this under general anaesthetic, so you are asleep. The surgeon makes two or three holes in your chest wall so they can put instruments in to take tissue samples from your lung.

Consent

We must by law obtain your written consent to any operation and some other procedures, including a lung biopsy, beforehand. Staff will explain the risks, benefits and alternatives before they ask you to sign the consent form. If you are unsure about any aspect of the procedure or treatment proposed, please do not hesitate to speak with a senior member of staff again. We will inform your GP that you have had this procedure unless you specifically instruct us not to.

How can I prepare for my biopsy?

Important: Ideally, you need to live within 30 minutes' travelling time of your nearest hospital and have access to a phone in case you need urgent treatment after you have gone home.

Pre-assessment appointment: We will arrange for you to have a pre-assessment appointment, either in person or by phone. You will be asked questions about you, your health and the medications you take. A blood sample will also be taken to check that you are in good general health and how well your blood clots. You usually have the blood test in our department at either King's College Hospital or PRUH, but sometimes you may have it taken at your local GP.

After your pre-assessment, we will arrange a date and time for your lung biopsy. We usually let you know the appointment details the same day as your pre-assessment the earliest.

Drugs and alcohol: Do not use any recreational drugs or drink alcohol for 24 hours before the biopsy.

Medications: Please make sure the doctor or nurse knows if you are taking any of the following blood-thinning medications (anticoagulants): aspirin, clopidogrel, warfarin, apixaban, rivaroxaban, edoxaban, ticagrelor, prasugrel, phenprocoumon, acenocoumarol, dagibatran, argatroban, heparins, fondaparinux, enoxaparin

Usually, you will need to stop taking these medications a few days to a week before the biopsy. But do not stop them on your own without talking to your lung doctor first. They will tell you when to stop and when it is safe to start taking them again.

If in doubt, please bring with you all the medications you are taking, whether it has been prescribed for you or if you have bought it over the counter at your local chemist store.

Will I be admitted to hospital for the biopsy?

You will have your biopsy as a day case patient, a 23-hour patient or a TCI patient. We explain what this means below. We will let you know which one applies to you:

1. **Day case patient:** You will have the biopsy in the morning and, if everything is normal and you are stable, you will be discharged home later in the day. Please arrive at Interventional Radiology at 8am so you can be admitted to the unit.
2. **23-hour bed patient:** You will come into the Interventional Radiology department in the morning, at about 8am. The nurses will confirm with the bed manager that there is a bed available before we can go ahead with the biopsy. This means that there is a chance your procedure will be cancelled if there is no bed available for you. If this happens, we will make another appointment for you to have your biopsy.
3. **To come in (TCI) patient:** You will be admitted to the hospital the day before your procedure and stay overnight before your biopsy. Rarely, you may be admitted on the morning of your procedure. The bed manager will call you to let you know when to arrive and which ward to go to.

What happens on the day of the biopsy?

Eating and drinking: Have a light breakfast at about 5am but do not eat anything after this time. You can drink clear fluids up to **two hours** before your biopsy.

Medications: Keep taking your regular medications, except for any blood-thinning ones. Remember to take your blood pressure medication on the morning of the procedure (if applicable). If your blood pressure is too high on the day of the biopsy, you might need to have the procedure on another day.

What to bring with you: Please bring a small overnight bag, all your medications and something to read, as a small number of patients (fewer than 5%) need to stay overnight after the procedure.

What not to bring with you: Do not bring valuables, jewellery or large sums of money with you. If this unavoidable, please ask a relative or friend to take them home for you. The hospital cannot accept liability for the loss of items that are not handed in for safekeeping.

What happens before my biopsy?

One of our nurses will ask you to change into a gown. They will take your observations, check your blood pressure, heart rate and temperature, and ask you some questions. They will put a small, thin tube called a cannula into a vein in your hand or arm so we can give you medications such as pain relief if you need them during or after the biopsy.

Either the nurse or ward staff will take you to the room in Interventional Radiology where you will have the procedure.

What happens during the biopsy?

An Interventional Radiologist – a specialist doctor trained in image-guided procedures – will carry out your biopsy. They will explain the procedure to you, ask for your consent and then do your lung biopsy.

They will ask you to lie on your back or on your front, depending on the area from where they are taking the biopsy. They will clean the area, use a CT scan machine to guide the needle and give you a local anaesthetic. You might feel a brief sting before the area gets numb.

The doctor will then make a small cut (less than 1cm) and put a needle in to take the sample from your lung. They will ask you to hold your breath for a few seconds as they take the sample. At this point, you might hear a clicking sound.

The doctor may take two or three samples to ensure there is enough tissue for analysis. Afterwards, they will cover the cut with a watertight dressing to help it heal.

Will the biopsy hurt?

The procedure should generally be painless, apart from the brief sting you feel when you have the local anaesthetic injection.

You might find the position the doctor asks you to lie in during the biopsy uncomfortable for a short while.

If you have any pain or discomfort, tell our nursing staff and they will give you some painkillers.

How long does the procedure take?

The whole procedure takes about 30 – 60 minutes.

What happens after the biopsy?

In the first hour after your biopsy you should try to keep still and minimise talking. This makes you less likely to develop a pneumothorax, where air leaks from your lung.

You may be asked to lie on the side of the cut for an hour or two. The radiologist and nurses will tell you for exactly how long. They will monitor you while you are recovering, to make sure there are no complications. Once they are sure you are ok, you will be able to sit up. Usually, after two hours, you will have a chest x-ray.

When can I go home?

The radiologist will check your x-ray. If all is well, you can eat and drink. They will also decide whether you can go home or be transferred to the ward, if the bed is ready. We will give you hot drinks and a sandwich to eat. If you need any special food, please bring this with you as we are unable to provide it.

Important: A relative or a friend must collect you from the hospital, take you home by car or taxi (not public transport) and stay with you overnight. You must not drive any vehicle for 24 hours after the procedure and you must make sure you feel well enough to drive after that time.

How do I care for the cut?

You will have a small dressing over the biopsy site which you can change if necessary. If the dressing is heavily soiled, you can use a plaster to cover the cut instead. Keep the site dry for at least 48 hours, then remove the dressing and wash the area with soap and water. Avoid using lotion or powder. Make sure the cut has healed before bathing or soaking it in water.

When can I exercise and go back to work?

For the next one to two weeks, avoid heavy lifting, contact sports and strenuous exercise. When you can go back to work depends on the type of job you do. If it involves heavy lifting, you may need to take a week off. If not, you should be able to return to work two – three days after the biopsy.

When can I start taking blood thinners again?

You will be advised when to restart taking any blood thinning medication after the procedure before you go home. If you are taking anticoagulants, your clinical team will let you know when it is ok to start taking them again.

What should I do once I am home?

- Rest for the rest of the day and possibly for the next day, depending on how soon you recover.

- Take your normal painkillers or analgesic tablets if you have any pain. Do not take aspirin because this interferes with how you blood clots.
- You must not travel by plane for six weeks after your biopsy. If you wish to fly in less than six weeks, please discuss this with your hospital doctor.

What should I look out for after the procedure?

- It is rare to have bleeding from the cut. If you do have any bleeding, press on the wound for about 10 – 20 minutes and it should stop.
- If you are short of breath (worse than you normally are), are coughing excessively or have chest pain which gets worse when you take a deep breath, more air may have leaked out of your lung. If this happens, go to your nearest hospital Emergency Department (ED/A&E) or call 999.
- Coughing up a lot of fresh blood is rare. If this happens, go to your nearest hospital Emergency Department (ED/A&E) or call 999.

When will I get the results?

The doctor who referred you for the biopsy usually discusses your results with you at your next clinic appointment. Please contact them for an outpatient appointment soon after leaving our department. It usually takes about 7 – 10 working days to get the results. They may take longer if the results are complicated.

What should I do if I cannot come for my biopsy?

Please let us know as soon as possible by contacting the Interventional Radiology Department, so we can arrange another date and time. This also enables us to offer your appointment time to someone else.

King's College Hospital, Denmark Hill, tel: **020 3299 3490**, **020 3299 6730** or **020 3299 3280**

Who do I contact with queries and concerns?

If you have any questions about your lung biopsy, please contact:

- Interventional Radiology Nurses, tel: **020 3299 3490** or **020 3299 2060**, Monday to Friday, 9am – 5pm
- Lung Clinical Nurse Specialist, tel: **020 3299 1452**

More information and support

- King's College Hospital: www.kch.nhs.uk
- NHS: www.nhs.uk, Tel: 111
- British Society of Interventional Radiology: www.bsir.org (click on Patients, click on patient information leaflets, select leaflet)

Care provided by students

We provide clinical training where our students get practical experience by treating patients. Please tell your doctor or nurse if you do not want students to be involved in your care. Your treatment will not be affected by your decision.

PALS

The Patient Advice and Liaison Service (PALS) is a service that offers support, information and assistance to patients, relatives and visitors. They can also provide help and advice if you have a concern or complaint that staff have not been able to resolve for you.

PALS at King's College Hospital, Denmark Hill, London SE5 9RS:

Tel: 020 3299 3601

Email: kch-tr.palsdh@nhs.net

You can also contact us by using our online form at **www.kch.nhs.uk/contact/pals**

PALS at Princess Royal University Hospital, Farnborough Common, Orpington, Kent BR6 8ND

Tel: 01689 863252

Email: kch-tr.palspruh@nhs.net

If you would like the information in this leaflet in a different language or format, please contact PALS on 020 3299 1844.

www.kch.nhs.uk

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