

Kidney biopsy – Image guided

Information for patients

This leaflet explains kidney 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 kidney biopsy?

It is a procedure where we take a small sample of tissue (biopsy) from one of your kidneys (or your kidney transplant) using a special needle. This sample is then carefully examined under a microscope. We only take a tiny piece of tissue, about half the size of a matchstick, and it will not affect how your kidney 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 kidney biopsy?

Your kidney doctor may recommend you have a biopsy if your blood tests or urine samples indicate that your kidneys (or your kidney transplant) are not working normally. It allows doctors to look closely at the kidney tissue to identify any issues. This helps them understand the cause of the problem and work out the most effective treatment plan for you. Sometimes, you have a biopsy to assess whether the current treatment you are having for your kidney disease is effective.

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 kidney 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 after a kidney biopsy.

- **Bleeding around your kidney:** You will have a tiny amount of bleeding but bleeding sufficient to cause a problem is uncommon (1:100 biopsies).
- **Blood in your urine:** Usually this stops by itself and you do not need any treatment. You may have to stay in hospital a little longer until the doctors and nurses are happy that the bleeding has stopped.
- **Blood transfusion:** If the bleeding is heavier, or continues for longer, you may need a blood transfusion.
- **Procedure to stop the bleeding:** If the bleeding is particularly heavy, or it is not stopping, you may need to go to the x-ray department (radiology). A special tube will be put into the top of your leg and threaded up to your kidney so a doctor can stop the bleeding (embolisation). Very rarely you will need surgery.
- **Inadequate sample:** Sometimes, the sample we take is not enough to make a diagnosis. If this happens, your kidney doctor will talk to you about doing the biopsy again.
- **Damage to other organs:** Very rarely other organs around your kidney can be damaged accidentally. If this happens, you may need to have an operation to repair the damage.
- **Radiation exposure:** You usually have a kidney biopsy using ultrasound (US) guidance. This does not expose you to radiation. Sometimes we use computerised tomography (CT) guidance and this involves a dose of radiation that is about the same as a CT scan of your abdomen.
- **Infection:** We use a clean process that protects you from infection. But as we have to make a small cut in your skin, there is a tiny chance of infection.

What are the benefits of having a biopsy?

It gives your doctor more detailed information about your kidney condition and helps them to plan the best treatment for you.

Are there any alternatives?

The only other way of taking a sample of your kidney tissue is to have surgery. Your doctor will discuss this with you, as well as the option of not having a kidney biopsy.

When and where will I have my kidney biopsy?

We aim to carry out your kidney biopsy as soon as possible after receiving the request from your doctor. You will have the biopsy at:

Interventional Radiology Department, 1st Floor, Denmark Wing, King's College Hospital (KCH), Denmark Hill.

Consent

We must by law obtain your written consent to any operation and some other procedures, including a kidney 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.

Do I need any tests before my biopsy?

You might need some blood tests to make sure it is safe for you to have the biopsy. You will have these either on the same day as the biopsy or before it.

How can I prepare for my biopsy?

Drugs and alcohol: Do not use any recreational drugs or drink alcohol at least 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 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 kidney doctor first. They will tell you when to stop and when it is safe to start taking them again.

Will I be admitted to hospital for the biopsy?

You are usually admitted to the hospital either the day before your biopsy or on the morning of the procedure. The bed manager will tell you when to come in and where to go – usually a renal or kidney ward.

What happens on the day of the biopsy?

Eating and drinking: You **must not** eat anything for at least **six hours** before your biopsy. You can have clear fluids up to **two hours** before your procedure. It is very important that you follow these instructions because you will be lying flat on your stomach (or back, if you have a transplant) during 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.

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 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.

The 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 kidney biopsy.

They will ask you to lie on your front or your side because it is easier for the doctor to reach your kidneys from the back. They will clean the area, use an ultrasound machine or 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) in your lower back and put a needle in to take the sample. 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.

If you have a transplant kidney, the process is similar, but you will usually lie on your back and the doctor will put the needle into your belly near your transplant scar.

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. But because we cannot inject the anaesthetic directly into your kidney, you may feel some pressure during the procedure.

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

Straight after the biopsy, you might feel some discomfort at the biopsy site and in your shoulder, but this can usually be eased by the painkillers we will give you.

As the local anaesthetic wears off, you may have some discomfort, but this usually eases within a few days. You can take paracetamol to ease any pain or discomfort but do not take non-steroidal anti-inflammatory (NSAIDs) painkillers such as ibuprofen (Nurofen) or diclofenac (Volterol) because these can harm your kidneys.

How long will the procedure take?

The whole procedure usually takes about half an hour.

What happens after the biopsy?

You must lie on your back in bed for a set time to recover, usually for at least six hours. 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.

If you are admitted to the hospital, you will return to the ward and stay overnight. Nurses will closely monitor your blood pressure, pulse and the biopsy site. They will give you painkillers if you are in any pain. It is important to let them know if you are in pain so they can help you.

If you need to go to toilet, the nurses will give you a bottle or bedpan so they can check your urine for blood. Do not get up until you have checked with them that it is ok to do so.

When can I go home?

If you have been admitted to hospital: If there are no complications, you may be discharged the day after the biopsy.

If you are a day case patient: If there are no complications, you will be able to go home later in the afternoon on the day of your biopsy.

Remember, you will not be able to drive yourself home after the procedure, so make sure someone can accompany you.

How do I care for the cut?

You will have a small dressing over the biopsy site which you can change if necessary. Keep the site dry for at least two days, 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 might be able to return to work two to three days after your biopsy.

When can I start taking blood thinners again?

If you are taking anticoagulants, your clinical team will let you know when it is ok to start taking them again. This will depend on how well the procedure went and the medication you are taking.

What should I look out for after the procedure?

If there are problems after the biopsy, they usually happen while you are still in hospital. But when you go home it is important to follow the advice we will give you about who to contact if you:

- have blood in your urine

- are unable to pass urine
- are having fevers (cold or hot sweats)
- feel light headed or dizzy
- have any discomfort which is getting worse rather than getting better.

If you feel very unwell, call 999 or go to your nearest Emergency Department (ED/A&E).

When will I get the results?

We will usually discuss the results of the biopsy with you at your next clinic appointment. If you do not have a clinic appointment booked, let the nurses or kidney doctor know before you go home.

If your biopsy was urgent or the result shows that you need treatment before your next appointment, the kidney doctors will contact you. Make sure we have your current phone number before you go home from hospital.

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.

Tel: **020 3299 3490**, **020 3299 6730** or **020 3299 3280**

Who can I contact with queries and concerns?

If you have any questions about your kidney biopsy, please contact the Interventional Radiology Nurses.

Tel: **020 3299 3490** or **020 3299 2060**, Monday to Friday, 9am – 5pm

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

Reference:

Kidney biopsy. (2023.). Kidney Care UK. <https://kidneycareuk.org/get-support/free-resources/patient-information-booklets/kidney-biopsy/>

University Hospitals Plymouth NHS Trust. (2024). Display patient information leaflets. <https://www.plymouthhospitals.nhs.uk/display-pil/pil-kidney-biopsy-4087>

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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