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# Kidney biopsy

## **What is a kidney (or renal) biopsy?**

A kidney biopsy involves taking a few small (matchstick-sized) samples from one or both of your kidneys. This is done when blood / urine tests or imaging tests show abnormalities indicating that the kidneys are not working as they are supposed to. With the results from the biopsy, your doctor will be able to understand what is happening to your kidney(s), guiding appropriate treatment.

## **How to prepare for the procedure**

Prior to the procedure, several routine tests are usually carried out by your doctor which might include:

- Blood pressure reading (to ensure levels are not too high for the procedure)
- Blood tests (to ensure you do not have any problems with the way your blood clots)
- Urine sample (to exclude any on-going urinary tract infections prior to the procedure)
- Routine ultrasound of your kidneys (to check the position and size of your kidneys).

Your doctor will also inquire about your medical history and whether you are on any medication – you might be asked to temporarily stop certain medication which might interfere with procedure itself (such as blood-thinners).

## **What does the procedure involve?**

The procedure will take place in an interventional suite. You will initially be taken to the Recovery Area (adjacent to the operating room) where you will be asked to change into a surgical gown. Your belongings will also be kept in a safe room. You will then be asked to wait within this room until you are called from the operating theatre, at which point you will be taken theatre by a theatre nurse on a stretcher.



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During the procedure, you will be lying in a prone (face-down) or sideways position on the theatre table. Appropriate blood pressure, oxygen saturation and heart-rate leads will be attached to you to allow continuous monitoring of your general condition during the procedure. Once you have been positioned as needed, the area required (usually at the left or right flank of the abdomen, as requested by the ordering physician) will be thoroughly scrubbed and cleaned using an antiseptic agent. Once cleaned, the now-sterile area will be covered by using a blue sterile drape with a hole in the middle exposing only the area required during the procedure – it is important that during the procedure you remain completely still with your hands above your head (as will be instructed on the day).

Using the ultrasound machine, the appropriate kidney requiring biopsy is then located. The doctor performing the procedure will then proceed to inject a few milliliters of local anaesthetic into the skin and then deeper inside next to the kidney. A mild burning sensation at the site of injection might be felt at this time.

A small cut is made using a scalpel in the now-anaesthetised skin. The doctor will then proceed to advance the biopsy needle through this cut until he or she reaches the kidney, all the while visualizing the needle on the ultrasound machine. CT guidance might occasionally be used, if the target is not seen well on ultrasound. Once the desired location is reached, the biopsy will be taken via the biopsy needle. At this point, the performing doctor will inform you of a sudden loud noise you will hear (similar to a staple gun) once the gun is fired so as to prepare you and avoid any sudden jumping or starting from your point on hearing the sound. The doctor will then deposit the sample taken in an appropriate container. The procedure is usually repeated 1-3 times (more might be necessary). The entry site is then pressed for a minute and covered using a sterile dressing.

The entire procedure usually lasts between 10-30 minutes.



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## **What happens after the procedure?**

After the procedure, you will be taken back to the Recovery Area where your parameters and general condition will be monitored for a few hours. Should no complications occur, you will then be discharged home that same day.

On a certain number of occasions, you might be asked to stay overnight for further monitoring. This will be done as a precaution and if you remain stable, you will then be discharged home. Such scenarios include:

- If you were taking a blood thinning agent which could not be omitted before the biopsy
- If you developed a complication during the procedure such as a small bleed
- If requested by your referring clinician prior to the procedure

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

Every procedure carries a small number of risks which might or might not occur. In the case of kidney biopsies, the following might be seen:

- Back pain or discomfort (seen in around 10% of patients and usually relieved by mild analgesia and bed rest).
- Blood in the urine (seen in around 1-3% of people after having a biopsy). This is usually self-limiting and resolves within a couple of days.
- Bleed around the biopsied kidney (seen in less than 6% of cases). This is also usually self-limiting and resolves within a few days. Rarely (in less than 1% of people), the bleed will be severe enough to require a blood transfusion or even another operation to manually stop the bleeding.



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## **When will the results of the biopsy come out?**

Biopsy results are usually issued within 7-10 working days. It is essential to ensure you have a follow-up appointment with the doctor who booked the procedure for you to discuss the biopsy results.

**Compiled by Dr. Simon Gatt**