

IMAGE-GUIDED PERCUTANEOUS BIOPSY



Percutaneous biopsy describes the taking of a tiny piece of tissue from a part of the body with a needle passed through the skin. It is a safe, effective, and accurate procedure for the diagnosis of various diseases, replacing the need for open surgery to make a diagnosis in most cases. This technique can be performed with similar principles in various organs of the body e.g. liver, kidney, lung, bone etc.

Percutaneous (through the skin) biopsy is used to obtain a tissue sample to determine if a lesion is cancerous (malignant) or not. If the lesion is cancerous, the tissue can be used to classify a malignancy to determine the treatment required. It can also be used to:

- identify tumour markers and cell types of tumours
- analyse the mutational status of tumours
- evaluate patients with known or suspected infection
- determine the nature and extent of diffuse or systemic diseases
- match organ tissue before a transplant
- look for signs of organ rejection following a transplant

How will I benefit from the procedure?

Percutaneous biopsy can accurately and safely obtain a sample from even a very small abnormality: it will spare you from surgical biopsy, which is more invasive and requires

longer hospitalisation and recovery times. The result of the biopsy will help your doctor to identify the cause and extent of your disease, establish a diagnosis and decide on a therapeutic plan.

How should I prepare for the procedure?

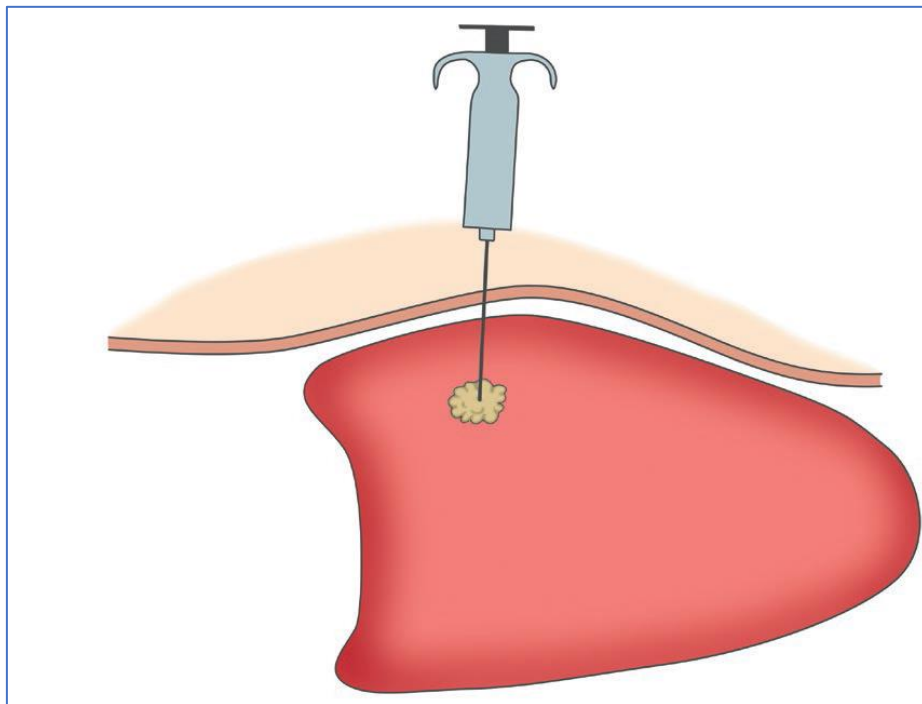
Most percutaneous biopsies are performed in an outpatient setting with minimal preparation. You should talk with your doctor about any medications you take, as some may need to be adjusted or stopped before the procedure. You may be instructed not to eat or drink for 6-8 hours before the biopsy. If needed, a blood sample may be drawn for appropriate blood tests. You may want someone to accompany you and drive you home afterwards. This is mandatory if you have been sedated.

The procedure

The procedure is performed under image guidance, most often using ultrasound, CT, or fluoroscopy (live x-rays) or a combination. The Interventional Radiologist will first review any CT, MRI, or PET-CT you may have already had to identify the exact location of the target lesion and determine the shortest and safest path for the biopsy. In some cases, a small cannula may be placed in a hand or arm vein, to give you intravenous medications, and you will be connected to a monitor to record your vital signs. You will be put in a comfortable position and your skin will be prepared and draped using a sterile technique. Your skin and the underlying structures will be injected with local anaesthetic.

On rare occasions, intravenous sedation and/or pain relief medications are given. If necessary, a very small pin hole sized incision is made. Then, the biopsy needle is inserted, and a small tissue sample is taken. During the process, your doctor will need your

cooperation and may give you some instructions (e.g. to hold your breath). In many cases, more than one tissue sample is taken. Occasionally, the interventional radiologist may use a guide needle to inject plugging material at the end of the procedure to reduce the risk of bleeding. Bleeding afterwards is usually very short-lived and managed by applying firm pressure with the fingertips. A small dressing is then applied at the puncture site. In some cases, post-procedure imaging may be needed. The tissue samples are then prepared and sent to the relevant laboratory department.



What are the risks?

Percutaneous biopsy is a safe procedure with a low complication rate. Possible complications (common for all biopsies) include local bruising, bleeding (usually minor), infection, perforation, unintended adjacent organ injury, tract seeding or failure. Every patient and every case is different. Your doctor can give you more information and answer questions regarding your specific biopsy.

What should I expect after the procedure? What is the follow-up plan?

If you had been given intravenous sedation you will regain control of your physical and mental faculties quickly. You may be asked to stay in a hospital bed and be monitored for 1-6 hours. You may be asked to stay in a certain position for a few hours to avoid complications. In the case of procedures at higher risk for bleeding (e.g. renal biopsy), blood tests may be required. If the doctors are concerned, they may keep you in the hospital overnight. You will need a follow-up appointment to meet your doctor to receive your results and find out what, if any, further treatment you need.