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# Biopsy

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A biopsy is a medical procedure, during which a small sample of tissue is removed from a part of the body. The sample of tissue is then examined under the microscope to look for abnormal cells. Sometimes the sample is tested in other ways. For example, it may be tested with chemical reagents to help identify abnormal chemicals in the tissue sample. Sometimes tests are done on the sample to look for bacteria or other germs.

**Note:** the information below is a general guide only. The arrangements and the way tests are performed, may vary between different hospitals. Always follow the instructions given by your doctor or local hospital.

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## Why are biopsies done?

- **Biopsies are often important to diagnose cancer.** A biopsy is commonly done if you have a lump or swelling of a part of the body where there is no apparent cause. In these situations often the only way to confirm whether the lump is a cancer is to take a biopsy and look at the cells under the microscope. Cancer cells look different to normal cells.
- Various other conditions can be diagnosed by taking a biopsy. For example, inflammation within organs such as the liver or kidney can be seen on a biopsy sample. There are various causes of inflammation and sometimes the biopsy can identify particular cells that occur with specific types of inflammation.
- Sometimes you may already have a condition but a biopsy can help to assess how severe it is. For example, a biopsy may help to find out how severe inflammation is within an organ such as the liver. It may also help in determining the type or stage of cancer. This will then help the medical team decide on which treatment would be best.

## How are biopsies done?

There are many different procedures to obtain biopsy samples. It depends on what part of the body the sample is needed from. For example:

- **A 'punch' biopsy.** This is useful to diagnose a range of skin conditions. A special instrument punches a small hole through the top layers of the skin to remove a sample of skin. To make the procedure painless, the doctor may inject some local anaesthetic or put on some anaesthetic cream beforehand.
- **A 'needle' biopsy.** This can sample tissue from organs or lumps beneath the skin. For example, a special long needle can be inserted through the skin into the kidney, liver, thyroid, bone marrow or abnormal lumps, etc. A small sample of the tissue can be obtained this way. The doctor will usually inject some local anaesthetic using a fine needle into the skin first. This is to make the procedure painless. In some cases, you may have the biopsy whilst having an **ultrasound scan** or **magnetic resonance imaging (MRI) scan**. This is so the person doing the biopsy can see the needle is going in the right place. See also the separate leaflets called **Bone Marrow Biopsy and Aspiration**, **Kidney Biopsy (Renal Biopsy)** and **Liver Biopsy**.
- **Endoscopic biopsies.** An endoscope is a thin flexible telescope which is used to 'look' into various parts of the body. A biopsy of tissue is commonly taken during these procedures. One example is a gastroscopy, when an endoscope is passed through the mouth and into the stomach. During this test, the doctor or nurse may take a biopsy of the stomach lining.
- **Excisional biopsy.** This means an entire abnormal lump is removed to be examined. This may be done under a local or general anaesthetic, depending on the site of the lump. For example, this type of biopsy may be done for certain breast lumps.

- **Perioperative biopsy.** Sometimes, during an operation, a surgeon may remove a small sample of tissue which is examined within a few minutes. This may help the surgeon to determine the cause of a lump inside the body, which may help to decide on how to proceed with the operation.

## Further reading & references

- [Skin biopsy](#); DermNet NZ
- [D'Alfonso TM, Ginter PS, Shin SJ; A Review of Inflammatory Processes of the Breast with a Focus on Diagnosis in Core Biopsy Samples. J Pathol Transl Med. 2015 Jul;49\(4\):279-87. doi: 10.4132/jptm.2015.06.11. Epub 2015 Jul 15.](#)

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