

Lung Biopsy

What is a lung biopsy?

A lung biopsy removes a small piece of lung tissue that can be looked at under a microscope by the pathologist or sent to a microbiological laboratory for culture to identify the organisms causing a disease.

When may a lung biopsy be required?

A lung biopsy is usually performed to determine the cause of abnormalities, such as shadows or nodules that appear on chest x rays. It can confirm a diagnosis of cancer, especially if malignant cells are detected in the patient's sputum or bronchial washing. In addition to evaluating lung tumors and their associated symptoms, lung biopsies may be used to diagnose lung infections, especially tuberculosis and Pneumocystis pneumonia, drug reactions, and chronic diseases of the lungs such as sarcoidosis, interstitial lung disease and pulmonary fibrosis.

How is a lung biopsy performed?

The biopsy can be performed in 4 ways. The method used depends on where the sample needs to be taken from and the patient's overall health.

Bronchoscopic biopsy: This is usually performed under mild sedation by giving an intravenous medicine to make you sleepy and relaxed. The doctor passes a lighted instrument (bronchoscope) through the mouth or nose and into the airway and removes a sample of lung tissue. This method may be used if an infectious disease is suspected, if the abnormal lung tissue is located next to the breathing tubes (bronchi), or before trying more invasive methods, such as an open lung biopsy.

Needle biopsy: A needle biopsy uses a long needle inserted through the chest wall (under local anesthesia) to remove a sample of lung tissue. This method is used if the abnormal lung tissue is located close to the chest wall. A computed tomography (CT) scan, an ultrasound, or fluoroscopy is usually used to guide the needle to the abnormal tissue.

Open lung biopsy: This is performed under general anesthesia. The surgeon makes a cut (incision) between the ribs and removes a sample of lung tissue. An open biopsy is usually done when the other methods of lung biopsy have not been successful, cannot be used, or when a larger piece of lung tissue is needed for a diagnosis.

What is thoracoscopic lung biopsy?

Thoracoscopic lung biopsy is carried out under general anesthesia. The surgeon makes a small (about 1-cm) incision and places a short tube called a cannula in the chest. To look inside the chest, the surgeon passes a telescope connected to a miniature video camera through the cannula. The telescope that picks up the picture of the inside of the chest and transmits it to a television screen. The surgeon then identifies the area of abnormal lung and obtains a biopsy by stapling off a portion of the lung. Stapler is a device that simultaneously seals off the lung tissue with staples and divides and separates the area of intended biopsy. At the end of the procedure a small tube may be placed in the chest.

Usually the sample is sent to a pathologist immediately for processing (called frozen section) when the patient is under anesthesia. This helps the surgeon, as the pathologist is able to indicate whether or not the sample is adequate and also is able to point to a tentative diagnosis. The final diagnosis often takes five to seven days as the sample has to be processed in a particular manner and special tests carried out on it. In case the sample is deemed inadequate the surgeon can obtain more samples before the patient is brought out of anesthesia.

What are the advantages of a thoracoscopic lung biopsy?

- Ability to clearly identify the area of abnormality in the lung and obtain adequately large samples
- Less pain from the incisions after surgery
- Shorter hospital stay

- Shorter recovery time
- Faster return to work or normal activity
- Better cosmetic healing

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Disclaimer

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