Needle Biopsy of the Lung and Pleura

(Transthoracic Needle Aspiration; Percutaneous Needle Aspiration)

**Definition**
A needle biopsy of the lung or pleura is done to remove a sample of lung or pleural tissue. Pleura is the lining of the lungs and chest wall. Once the tissue is removed, it will be examined in a lab. If there is a collection of fluid around the lung, a sample of fluid may also be taken at the time of the biopsy.
Reasons for Procedure

This procedure is used to diagnose abnormal tissue in or around the lung. Possible reasons for abnormal tissue are:

- Noncancerous tumors
- Cancer
- Lung tissue scarring
- **Pneumonia**
- Other lung infections, such as *tuberculosis* or histoplasmosis
- As a consequence of certain systemic diseases, such as *rheumatoid arthritis*, *sarcoidosis*, or *granulomatosis with polyangiitis*

Possible Complications

Problems from the procedure are infrequent, but all procedures have some risk. Your doctor will review potential problems, like:

- **Collapsed lung**
- Bleeding
- Air leaking outside the lungs
- Infection
- Damage to the liver or spleen

Factors that may increase the risk of complications include:

- **Smoking**
- **Obesity**

Make sure to tell your doctor if you are pregnant.

What to Expect

Prior to Procedure

Images of the chest and lungs may be taken with:

- **X-ray**
- **CT scan**
- Ultrasound

Leading up to your procedure, do not start taking any new medications without consulting your doctor.

Talk to your doctor about your medications. You may be asked to stop taking some medications up to 1 week before the procedure.

Anesthesia

- You may receive a mild sedative about an hour before the procedure. It will help you relax.
- You may also have an injection of a local anesthetic. It will numb the area where the needle will be inserted.

Description of the Procedure
Your skin will be cleaned with an antiseptic solution. You will be in a seated position, leaning forward, with your arms resting on a table for support. You should remain as still as possible. An ultrasound or CT scan will be used to locate the exact area.

A small cut will be made in your skin. Then, while you hold your breath, the biopsy needle will be inserted through the cut. The needle will be passed between your ribs until it reaches the lung or pleura. Some cells will be withdrawn through the biopsy needle. The needle will be withdrawn. Pressure will be put on the site of the incision. When the bleeding stops, a bandage will be applied.

**How Long Will It Take?**

30-60 minutes

**How Much Will It Hurt?**

- Before the procedure, when the local anesthetic is injected, you may feel a brief sting.
- During the procedure, when the needle is inserted, you will probably feel some pressure. If you are having a lung biopsy, you will feel a quick, sharp pain when the needle touches your lung.

**Post-procedure Care**

**At the Care Center**

- You will rest for several hours after the procedure. Your recovery will be monitored.
- A few hours after the procedure, a chest x-ray or other imaging technique may be done. This is done to make sure a lung has not collapsed and that there is no bleeding.
- If there are no complications after 4 hours, you may go home.

**At Home**

Your activity may be restricted for up to 1 week. Follow your doctor’s instructions.

**Call Your Doctor**

It is important to monitor your recovery. Alert your doctor to any problems. If any of the following occurs, call your doctor:

- Signs of infection, including fever and chills
- Redness, swelling, increasing pain, excessive bleeding, or any discharge from the incision site
- Pain that you cannot control with the medications you’ve been given
- Cough, shortness of breath, or chest pain
- Coughing up blood
- Pain when taking a deep breath
- You feel your heart rate is fast

If you think you have an emergency, call for medical help right away.

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