VATS: Lung Biopsy
When You Need a Lung Biopsy

Your doctor thinks that you have a lung problem. Something suspicious may have been found on a test. Or, you may need to be screened because you’re at risk of lung cancer. To learn more about your lungs, your doctor recommends that you have a lung biopsy. This is a procedure to remove a sample of lung tissue for testing. The biopsy is done using a method called video-assisted thoracic surgery (VATS). With VATS, an instrument called a thoracoscope is inserted through small incisions in the chest to remove the tissue sample. This helps your doctor diagnose a problem and choose the best treatment for you.

Signs of a Possible Chest or Lung Problem

Problems in the chest or lungs include infection, cancer, non-cancerous masses, smoking-related and non-smoking-related diseases. These problems may share the following:

- Coughing
- Shortness of breath
- Chest pain
- Dark or bloody sputum
- Hoarseness
- Trouble swallowing

Tests You May Have Had

You may have already had tests, such as a chest x-ray and other imaging tests, or a sputum test. If a problem was found, a VATS lung biopsy may be needed to confirm the problem. Depending on the results, you may need to see more than one healthcare specialist to further diagnose or treat the problem.
Quit Smoking for Good
If you smoke, there is no better time to quit than right now. Smoking leads to cancer and other lung problems. So talk to your doctor about getting help. He or she can provide you with resources to help you quit smoking for good.

What You Will Learn
This product will help you understand more about VATS lung biopsy. If you still have questions after reading this product, be sure to talk to your doctor. He or she can address any concerns you have.

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Anatomy of the Chest and Lungs

The space inside the chest where the lungs are found is called the chest cavity. The lungs take up most of the chest cavity. They are protected by the chest wall, which is made up of the ribs, breastbone, and muscles. The lungs are divided into sections called lobes (three in the right lung, two in the left). The lungs are separated from the abdomen by the diaphragm (breathing muscle). Air flows into and out of the lungs through bronchial tubes (breathing passages).

The Mediastinum

The mediastinum is the area between the two lungs. The heart, trachea, esophagus, bronchial tubes, and lymph nodes are in the mediastinum. The spine is at the back of the mediastinum and the breastbone is at the front.
What Your Doctor Is Looking For

A number of problems can affect the lungs and chest. These include masses, infections, and other diseases. VATS biopsy can help the doctor determine what the problem is and how serious it may be. Common types of chest and lung problems are listed below.

Masses

A mass is a lump of abnormal tissue. It can be **benign** (not cancerous) or **malignant** (cancerous). If a mass is found in the lung or chest, the doctor will want to take a tissue sample of it. This tissue sample helps the doctor determine if the mass is cancerous. Depending on the mass, it may need to be removed.

Infections

Infections are illnesses caused by bacteria, viruses, or fungi. Examples of lung infections include tuberculosis and pneumonia. Lung infections can irritate the airways. They can also cause fluid to build up in the lungs or chest. Some lung infections are contagious. This means they can travel from an infected person through the air to infect another person. Most lung infections can be treated with antibiotics or other medications.

Diseases

VATS lung biopsy may be used to help diagnose pleural effusion (fluid in the pleural space) and help find a cause. It may also be used to help diagnose chronic lung diseases, such as sarcoidosis or pulmonary fibrosis.
Having VATS Lung Biopsy

Your doctor will discuss your VATS biopsy with you, including its risks and benefits. You’ll be told how to prepare for the procedure. VATS is a surgical procedure that uses several small incisions. It may take some time to recover from. Your doctor can tell you more.

How VATS Is Done

VATS is done with a thoracoscope ("scope"). The scope has a light, lens, and camera. It allows the doctor to see images of the inside of the chest and lungs and also remove tissue samples. During the procedure, more than one biopsy (tissue sample) may be removed from different areas of the lungs. These samples help determine if a lung problem involves infection, cancer, or other diseases. In some cases, a suspicious mass is removed.

Preparing for the Procedure

Before your procedure, do the following:

• Follow your doctor’s instructions about eating and drinking. You may be told not to eat or drink anything after midnight the night before the procedure.
• Tell your doctor about the medications you take. You may need to stop taking certain medications before the procedure, especially aspirin, Coumadin, or other blood thinners.
• Discuss any allergies and health problems with your doctor.
• Tell your doctor if you are pregnant.

Follow your doctor’s instructions for how to prepare for your biopsy.

Risks and Complications of VATS Lung Biopsy

• Hoarseness
• Bleeding
• Infection
• Abnormal heart rate
• Pneumothorax (collapsed lung)
• Injury to other structures in the chest
• Respiratory failure (rare)
• Nerve damage
• Death (rare)
The Day of the Procedure

Be sure to arrive at the hospital on time. Here’s what to expect:

• You’ll be asked to sign some forms and change into a hospital gown.
• An IV (intravenous) line is started in your arm. It delivers fluids and medications. This includes **general anesthesia** (medication to make you sleep and keep you free of pain during the procedure).

During the Procedure

Following is what will happen during the procedure:

• Once you’re asleep, an incision is made in the side of the chest.
• The scope is passed through the incision into the pleural space.
• A tiny camera is passed down the scope. This sends images of the inside of the chest to a video monitor viewed by the doctor.
• Other small incisions are made for instruments to pass through and remove tissue.
• The incisions are closed with sutures.
Recovery from Your Lung Biopsy

You may feel groggy and sore after the surgery. You may need to stay in the hospital for 1 to 5 days. This is so staff can monitor your health and manage your pain. Once at home, slowly ease back into normal activities. Follow your doctor’s instructions carefully. And be sure to make and keep all follow-up appointments.

In the Hospital

After your procedure, you’re sent to a recovery room to recover from the anesthesia. Nurses continue to check on you. If you have pain, be sure to tell your nurses. They will give you pain medication when needed. In some cases, an IV line provides fluids and pain medication. To help keep your lungs clear, improve breathing, and prevent infection, a healthcare provider teaches you a breathing exercise called incentive spirometry. It should be done every hour or so. Also, depending on your condition, a nurse or other healthcare provider helps you get up and walk soon after the procedure. This is to keep your blood moving and help prevent infection.

At Home

Once at home, be sure to:
- Avoid lifting more than 5 to 10 lbs.
- Limit strenuous activity.
- Take pain medication as directed.
- Return to work and drive a car only when your doctor says it’s okay.
- Continue doing incentive spirometry.

When to Call the Doctor

- Redness or swelling of skin at incision sites
- Drainage at incision sites
- Uncontrolled or increased pain
- Shortness of breath
- Rapid heart rate
- Fever of 101.1°F (38.5°C) or higher

Incentive spirometry should be done regularly to help inflate the lungs and prevent infection.
Getting Your Biopsy Results

It will likely take a few days to get back your biopsy results. During this time you may feel anxious. You’re likely worried about cancer and what the next step is for your health. Your doctor will discuss the results with you in detail. He or she will explain any follow-up care or treatment you need. Be sure to share any concerns you have with your doctor.

If You Have Lung Cancer

You may be referred to one or more cancer specialists for further testing. You may need additional surgery to remove cancer from the lungs. Other treatments, such as chemotherapy or radiation, may be needed as well. Your doctor will work closely with you to design the best treatment plan for you.

If You Have Another Lung or Chest Problem

Your doctor will discuss treatment with you. If you’re given medication, follow your doctor’s instructions carefully. And continue to make and keep all follow-up visits. These visits help your doctor monitor your health.

Your doctor will discuss treatment options with you. Be sure to share any concerns you have with him or her.
Moving Forward

If you’ve been diagnosed with cancer or another serious lung or chest problem, you’re likely feeling scared or confused. There are people you can talk to who understand what you’re going through. Your healthcare providers and the organizations listed below can offer you and your family support.