

Lung Surgery: Thoracoscopy



A Problem with Your Lungs

Your doctor has told you that you need surgery called **thoracoscopy** for your lung problem. This surgery alone may treat your lung problem. Or you may need other treatments as well. It's normal to be concerned about surgery. You may want to know how it will affect your health and how long it will take you to recover. Read this product to learn more about what to expect.

What Can Thoracoscopy Do for Me?

Your doctor is recommending thoracoscopy because it's the best way to treat your lung condition. If a problem has been found in your lung during a routine test (such as an x-ray), this surgery may be needed to confirm the diagnosis. This is especially true when a mass is found in your lung. Thoracoscopy can also be used to treat other lung problems, such as a collapsed lung. The exact goals of thoracoscopy will depend on your condition. Your doctor can tell you more.



What Is Thoracoscopy?

Thoracoscopy is a type of lung surgery. It requires several small incisions in the chest to reach the lung. During the surgery, a thin, flexible tube called a thoracoscope (“scope”) is used. The scope contains a light and a camera. When the scope is inserted through one of the incisions, it sends images of the lung to a video monitor. This allows the surgeon to see and examine the lung without opening up the chest. Procedures are then done as needed.



Do I Have Other Options?

Your doctor will give you as much information as possible to help you understand why surgery is the best option for you. You’ll be told what’s involved, how long your recovery will be, and what kind of results you might expect. Your doctor will also outline any other treatment options you may have. If you have concerns or questions, write them down and bring them with you to your next appointment.

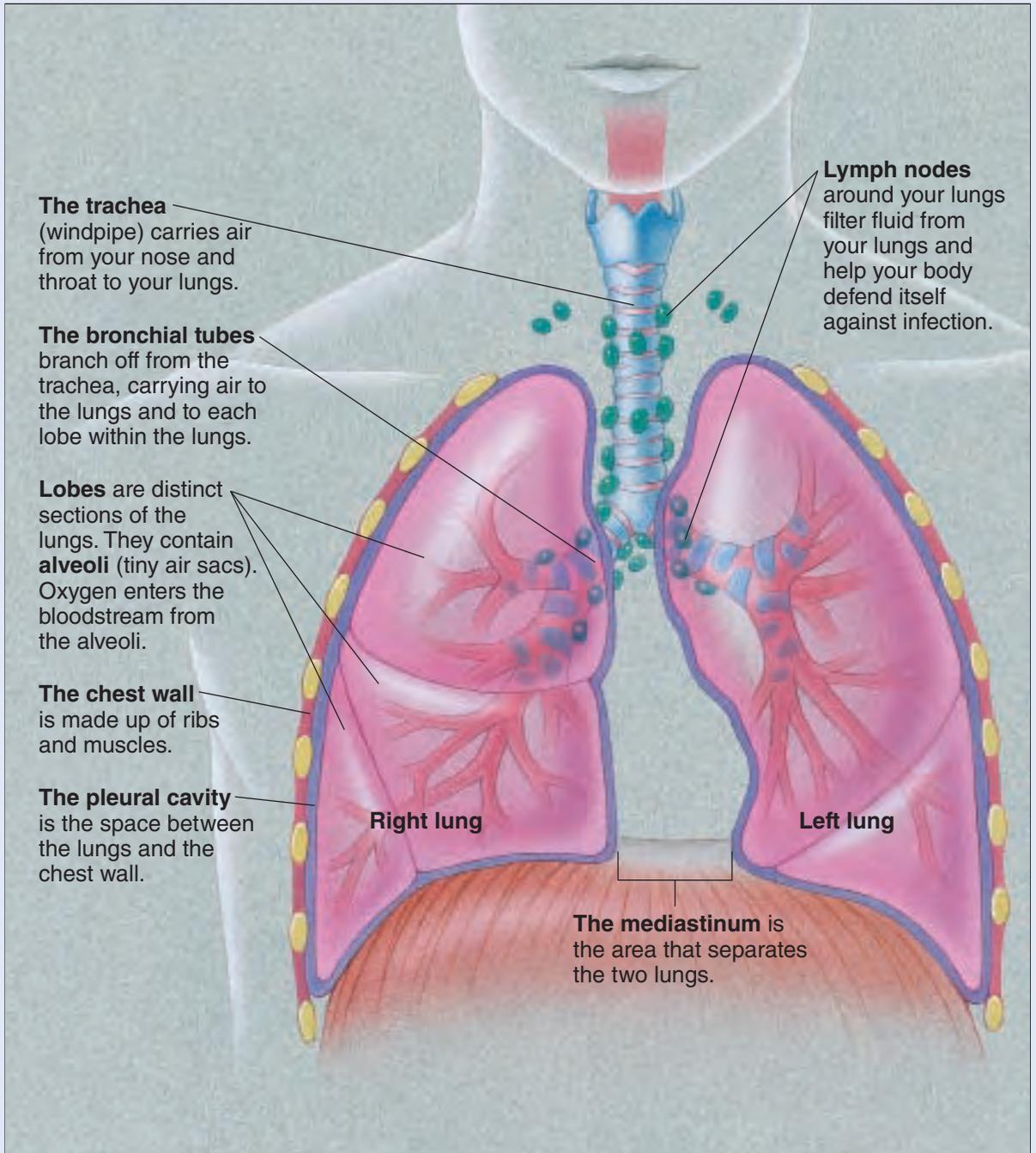


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Inside Normal Lungs

To see how surgery can help, you first need to understand the anatomy of your lungs. The two lungs, which take up most of the space in your chest inside your rib cage, are divided into sections called **lobes**—three in the right lung and two in the left. Air flows into and out of the lungs and lobes through **bronchial tubes** (breathing passages). Each lobe contains many microscopic air sacs called **alveoli**.

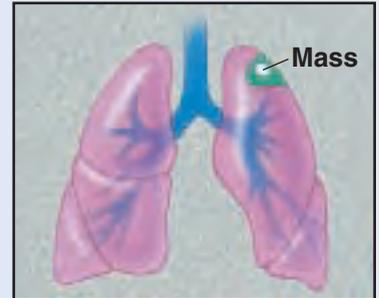


Common Reasons for Thoracoscopy

Thoracoscopy can be done to get a closer look at the inside of the lungs and to help treat lung problems. If a mass is found in the lung, surgery can help determine its cause. If necessary, the mass may also be removed. Surgery may be done for other conditions, as well, such as a collapsed lung or fluid around the lung.

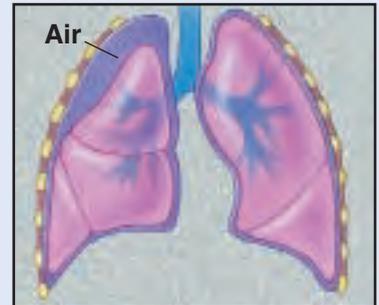
A Lung Mass

If a mass has been found in the lung, a **biopsy** (sample) can be removed and examined to determine whether the growth is **benign** (not cancerous) or **malignant** (cancerous). Other areas can also be examined to check whether the mass has spread. If the mass needs to be removed, its size, location, and spread determine how much of the surrounding lung also needs to be removed.



A Collapsed Lung

If a portion of the lung is thin or ruptured, air may leak into the **pleural cavity** (the space between the lungs and the chest wall). If air collects here, the lung may collapse (this is called **pneumothorax**). Tubes placed during surgery can drain air from the pleural cavity so the lung re-expands. During surgery, the lung can also be repaired so it's less likely to collapse again.



Other Lung Conditions

Fluid may collect in the pleural cavity around the lungs. One common cause of this is a lung infection, which may be a complication of certain types of surgery or an illness such as pneumonia. Tubes can be placed in the pleural cavity to drain fluid and help the lungs heal.

Your Evaluation

To help your doctor evaluate your lungs and diagnose your condition, a variety of tests may be performed. You may already have had some of these tests, and others may be scheduled before your surgery. Your doctor uses the information gathered during these tests to help determine the best course of action for your condition.

Imaging Tests

Imaging tests, which take pictures of your lungs, can detect problems such as a mass, an infection, or air in the pleural cavity. However, they can't tell the doctor for certain whether a lung mass is benign or malignant. Imaging tests you may have include:

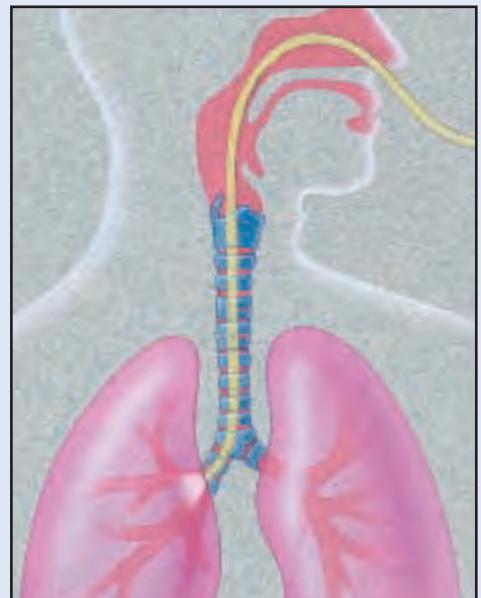
- **Chest x-rays**
- **CT** (computed tomography), also called CAT scans
- **MRI** (magnetic resonance imaging)
- Other imaging tests as needed



Visualization and Biopsy Tests

Visualization tests show the inside of your lungs and the area around your lungs. A biopsy of lung cells or tissue may also be examined later under a microscope. You'll be told about anesthesia beforehand. Possible tests include:

- **Bronchoscopy**, which is done using a thin, lighted tube (**bronchoscope**) inserted through the nose or mouth to examine the breathing passages at the entrance to your lungs.
- **Mediastinoscopy**, during which a tube is inserted through an incision above the breastbone to look at the area between the lungs.
- **Mediastinotomy**, during which the lymph nodes in the chest are examined through an incision in the chest wall, and a biopsy may be done.
- **Needle biopsy**, which involves insertion of a needle through the chest wall or a bronchoscope to collect tissue or fluid.



Bronchoscopy gives a closer look at your breathing passages.

Other Tests

You may have tests to measure how well your lungs work. They include:

- **Spirometry**, which measures lung properties such as how much air your lungs can hold, and how much air is left in your lungs after you exhale. It also measures how well your lungs expand and contract.
- **Pulse oximetry**, which measures how much oxygen is passed from your lungs to your blood.
- **Arterial blood samples**, which show how much oxygen is in your blood.



Spirometry measures how well your lungs function.

Treatment Options for Lung Cancer

If a diagnosis of lung cancer is suspected or confirmed, your doctor can outline your treatment. These options depend mainly upon the location of the cancer in your lung and the extent, or **stage**, of the cancer. The stage of a cancerous lung mass is based on its size, the type of cancer cells it contains, and how far the cancer has spread. In early stages, cancer may be confined to one small area of the lung. In later stages, it may spread within the lungs or through the lymph nodes to other parts of the body.

Once the stage has been determined, the best treatment method can be chosen. You and your doctor can decide on a treatment plan that best fits your needs. Three methods are available to treat lung cancer. One method or a combination of methods may be used.

- **Surgery** removes part or all of a lung to try to eliminate the cancer.
- **Radiation therapy** uses high-energy rays to destroy cancer cells.
- **Chemotherapy** uses special medications to control cancer cells.

Thoracoscopy

Thoracoscopy can be used to repair a collapsed lung; to examine, biopsy, stage, and remove a mass in the lung; or to drain fluid from around the lungs. During thoracoscopy, your surgeon can view the lung and perform procedures through small incisions in the chest wall.

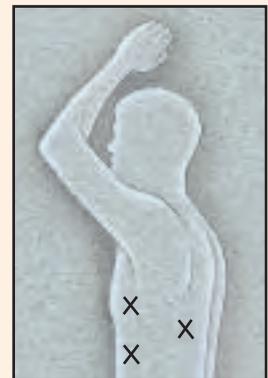
Preparing for Your Surgery

- Ask your doctor any questions you have about the procedure.
- Have blood tests or other routine tests that your doctor orders.
- If you smoke, stop immediately.
- Tell your doctor about any medications you're taking (including over-the-counter medications such as aspirin), and ask if you should stop taking them. Also mention any vitamins, herbs, or teas you take.
- Don't eat or drink anything after the midnight before your surgery, or as directed.
- Be sure to arrive at the hospital on time the day of your surgery.



The Surgical Procedure

- The anesthesiologist gives you **general anesthesia**, which lets you sleep and keeps you free from pain during surgery. Once you're asleep, you're positioned comfortably on your side.
- Several small incisions are made in your side.
- The thoracoscope is inserted through one of the incisions. This allows the surgeon to view your lung on a video monitor. Surgical instruments are inserted through the other incisions to perform procedures as needed.
- When the procedure is finished, one or more tubes may be temporarily placed in the chest to drain fluid and air. The tubes are connected to a special container. The incisions are then closed with sutures or staples.



Possible incision sites for thoracoscopy.

Risks and Complications

The risks of thoracoscopy include:

- Wound infection
- Bleeding
- Air leak from the lung, requiring a longer hospital stay
- Pain or numbness at the incision site
- Inflammation of the lungs (pneumonia)

Recovering in the Hospital

After surgery, you'll wake up in a recovery area. At first you may feel groggy and thirsty. An IV (intravenous) line provides you with fluids and medications to relieve pain, and monitors keep track of your breathing and heart-beat. To help keep your lungs clear and prevent inflammation, a respiratory therapist will teach you breathing exercises to do every hour or so.

Depending on your condition, a nurse or therapist will help you get up and walk soon after your surgery to keep your blood moving and improve healing. The hospital stay after a thoracoscopy is generally 1 to 4 days. If you have chest tubes, you won't go home until they're removed.

Recovering at Home

When you return home, follow your doctor's instructions about how to care for your healing skin and lungs. These instructions may include the following:

- Take your pain medications as prescribed to help relieve soreness and make activity and deep breathing easier.
- Continue to do the breathing exercises taught to you by your therapist.
- Walk to keep your blood moving and strengthen your muscles, but avoid strenuous activity, heavy lifting, and driving for several weeks.
- Ask your doctor when you can go back to work.
- Resume sexual relations when you feel ready.



When to Call Your Doctor

Call your doctor if you have any of these symptoms after your procedure:

- Shortness of breath
- Very red or draining incision
- Sudden, sharp chest pain
- Fever over 101°F (38.3°C)
- Coughing up bright red blood

Following Up with Your Doctor

As you recover from surgery, you'll see your doctor for regular follow-up visits. During these visits, your healing progress can be monitored. Your doctor can also discuss your plan of care with you and outline your options if you need further treatment.



For More Information

For more information about lung problems, try the following resources:

National Heart, Lung, and Blood Institute
www.nhlbi.nih.gov

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PATIENT EDUCATION
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This product is not intended as a substitute for professional medical care.
Only your doctor can diagnose and treat a medical problem.