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# MINIMALLY INVASIVE THORACIC SURGERY

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## Minimally Invasive Thoracic Surgery

### What is minimally invasive thoracic surgery?

Minimally invasive thoracic surgery, also called thoracoscopy or thoracoscopic surgery, is surgery of the chest that is performed with a thoracoscope (small videoscope) using small incisions and special instruments to minimize trauma. Other names for this procedure include pleuroscopy or VATS (video-assisted thoracic surgery).

During thoracoscopic surgery, three small (approximately 1-inch(2.54 centimeter) incisions are used, as compared with one long 6- to 8-inch (15.24-20.32 centimeter) chest incision that is used during traditional, “open” thoracic surgery. Surgical instruments and the thoracoscope are inserted through these small incisions. The thoracoscope transmits images of the operative area onto a computer monitor that is positioned next to the patient.

Compared with traditional surgery, patients who undergo minimally invasive surgery experience:

- Decreased postoperative pain.
- Shorter hospital stay.
- More rapid recovery and return to work.

### Who is a candidate for minimally invasive surgery?

If you need thoracic surgery, a minimally invasive surgical approach will first be considered. However, there are still some procedures that are best performed using a traditional, “open,” technique.

Your surgeon will carefully evaluate you to determine the safest surgical approach to treat your medical condition.

## Types of thoracoscopic surgeries

Thoracic surgery procedures routinely performed at Cleveland Clinic using a minimally invasive technique include:

- Video-assisted lobectomy.
- Wedge resection.
- Lung biopsy.
- Drainage of pleural effusions.
- Mediastinal, pericardial, and thymus thoracoscopic procedures.

## Video-Assisted Lobectomy

Lobectomy (removal of a large section of the lung) is the most common surgery performed to treat lung cancer. Lobectomy has been traditionally performed during thoracotomy surgery. During thoracotomy surgery, an incision is made on the side of the chest between the ribs. The ribs are then spread apart so the surgeon can see into the chest cavity to remove the tumor or affected tissue.

Cleveland Clinic Abu Dhabi surgeons routinely perform lobectomy using a minimally invasive approach. During video-assisted lobectomy, three 2.54 centimeter (1 inch) incisions and one 7.62–10.16 centimeter (3–4 inch) incision are made to provide access to the chest cavity without spreading of the ribs. The patient experiences a more rapid recovery with less pain and a shorter hospital stay (usually 3 days) with video-assisted lobectomy as compared with traditional thoracotomy surgery.

Although minimally invasive approaches are considered for every patient, in some cases, patients who have a large or more central tumor may not be candidates for video-assisted lobectomy.

## Wedge Resection

A wedge resection is the surgical removal of a wedge-shaped portion of tissue from one, or both, lungs. A wedge resection is typically performed for the diagnosis or treatment of small lung nodules.

## Lung Biopsy

A lung biopsy is a procedure in which a small sample of lung tissue is removed through a small incision between the ribs. The lung tissue is examined under a microscope by expert pathologists and may also be sent to a microbiological laboratory to be cultured. The lung tissue is examined for the presence of lung diseases such as infectious or interstitial lung disease.

# Drainage Of Pleural Effusions

A pleural effusion is the build-up of excess fluid between the layers of the pleura – the thin membrane that lines the outside of the lungs and the inside of the chest cavity. Normally, very little fluid is present in this space. The excess fluid is removed (drained) during a thoracoscopic procedure called thoracentesis and may be collected for analysis to indicate possible causes of pleural effusion such as infection, cancer, heart failure, cirrhosis, or kidney disease. Sterile talc or an antibiotic may be inserted at the time of surgery to prevent the recurrence of fluid build-up.

## Mediastinal, Pericardial, And Thymus Thoracoscopic Procedures

The mediastinum is the area in the middle of the chest between the lungs.

The pericardium is the area surrounding the heart.

The thymus is a small organ located in the upper/front portion of the chest, extending from the base of the throat to the front of the heart. The cells of the thymus form a part of the body's normal immune system. Early in life, the thymus plays an important role in the development of the immune system.

Thoracoscopic techniques can be used to examine the mediastinum, pericardium, or thymus, remove tissue samples, or surgically remove cancerous growths in the affected area.

### How can I be evaluated for thoracoscopic surgery?

Please call **800 8 CCAD (2223)** to schedule an evaluation with a thoracic surgeon.

When you meet with the thoracic surgeon, a physical exam will be performed and your treatment options will be discussed. The thoracic surgeon will discuss the benefits and potential risks of the surgical procedure that is recommended for you.

In general, preoperative tests include:

- Blood tests.
- Pulmonary function test (breathing test).
- CT scan.
- Electrocardiogram.

Your surgeon will determine if any additional preoperative tests are needed, based on the type of procedure that will be performed. If a cardiac (heart) evaluation is necessary, a consultation with a cardiologist will be scheduled.

As part of your preoperative evaluation, you will meet with an anesthesiologist who will discuss anesthesia and postoperative pain control.

The thoracic surgery scheduler will schedule any additional tests and consultations that have been requested by your surgeon. In general, after

your first meeting with your surgeon, all tests are scheduled on a single returning visit for your convenience.

### **How long will I stay in the hospital after the thoracoscopic surgery?**

The length of your hospital stay will vary, depending on the procedure that is performed. In general, patients who have thoracoscopic lung biopsies or wedge resections are able to go home the day after surgery. Patients who have a VATS lobectomy are usually able to go home 3 to 4 days after surgery.

### **What happens after the procedure?**

Your thoracic surgery team, including your surgeon, surgical residents and fellows, surgical nurse clinicians, social workers, and anesthesiologist, will help you recover as quickly as possible. During your recovery, you and your family will receive updates about your progress so you'll know when you can go home.

Your healthcare team will provide specific instructions for your recovery and return to work, including guidelines for activity, driving, incision care, and diet.

**Follow-up appointment:** A follow-up appointment will be scheduled 7 to 10 days after your surgery. Your surgeon will assess the wound sites and your recovery at your follow-up appointment and provide guidelines about your activities and return to work.

Most people who undergo minimally invasive thoracic surgery can return to work within 3 to 4 weeks.

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