

---

# Understanding Lung Volume Reduction Surgery (LVRS)

Lung volume reduction surgery (LVRS) is one type of treatment for emphysema. Emphysema is when the air sacs in your lungs become damaged over time. You may then have trouble breathing.

Emphysema is mainly caused by smoking cigarettes. It often occurs with chronic bronchitis, which causes a lasting cough and a buildup of phlegm. These two conditions are also known as COPD (chronic obstructive pulmonary disease).

Apart from lung transplant, COPD can't be cured. It's most often managed with medicines and other treatments. But the problem tends to get worse with time. If treatments are no longer enough to help with breathing, surgery may be an option.

## Why LVRS is done

Your healthcare provider may advise LVRS for your emphysema. During this surgery, the surgeon removes the damaged part of the lung. This allows the rest of the lung to work better. LVRS can help make breathing easier. This helps you have a better quality of life.

LVRS isn't for every person with COPD. You may be a candidate for the surgery if you:

- Have lung damage, often in the upper part of the lung, especially if it is only in one part of the lung
- Are younger than 75 to 80 years old
- Have not smoked for at least 6 months
- Can't exercise well even after going through pulmonary rehab (rehabilitation)

## How LVRS is done

You will see a pulmonologist. This is a healthcare provider who focuses on lung health. You will need some tests to see whether surgery is right for you. You might have:

- Pulmonary function tests
- 6-minute walk test
- Arterial blood gas test
- CT scans of the lungs
- Electrocardiogram (ECG)
- Echocardiogram (echo)
- Exercise test

If surgery is right for you, you will talk with a thoracic surgeon. This is the healthcare provider who will do the surgery.

---

If tissue needs to be taken out from both lungs, you will have open surgery. The surgeon makes a cut (incision) in the center of your chest. They gently move apart the breastbone. The surgeon takes out the damaged lung tissue.

If tissue needs to be taken from only one lung, you will have a thoracoscopy. The surgeon makes 3 to 5 small cuts on both sides of your chest. They put tools through the cuts for the surgery. The surgeon then takes out the damaged lung tissue.

After surgery, healthcare providers will care for you as you recover. You will likely stay in the hospital for 5 to 10 days. You will then go home to finish your recovery. You may start pulmonary rehab about 4 to 6 weeks after surgery. This includes exercises, information about your condition, and help with managing it. Rehab will help your lungs work better. It will improve your quality of life. Check with your insurance plan to find out if rehab is covered.

## **Risks of LVRS**

The benefits of LVRS are better breathing and a better quality of life. But as with any surgery, there are risks. These include:

- No improvement after the surgery
- Air leakage from the lung stitches (sutures) into the chest cavity
- Lung infection (pneumonia)
- Stroke or heart attack
- Bleeding
- Blood clots
- Death from worsening health problems, including those listed above