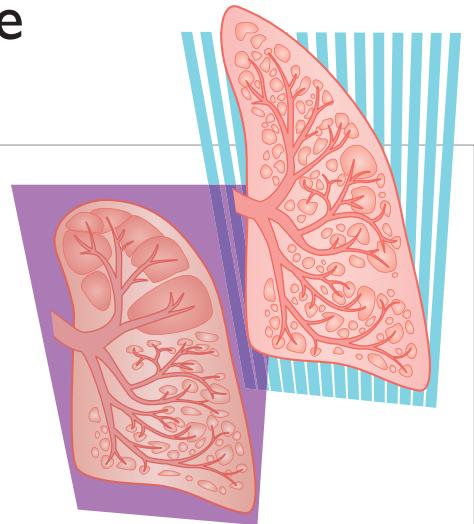


## PATIENT EDUCATION | INFORMATION SERIES

# Surgery for Chronic Obstructive Pulmonary Disease

If you have COPD, you may benefit from lung surgery. Only a small number of people however, have the type of COPD that will benefit from surgery. The major types of surgery for COPD are bullectomy, lung volume reduction (LVRS) and lung transplantation.

If you have COPD and require surgery for other reasons, you should speak with your healthcare provider before having any operation.



## What is a bullectomy?

Emphysema (not chronic bronchitis) causes air sacs to become over inflated. When air sacs get extremely large, they are called bullae (bull-eye). These extra-large air sacs are pressing on healthier lung, preventing the healthier air sacs from working properly. Bullectomy is a surgical procedure that can remove giant bullae which occupy greater than one third of the right or left chest. Very few people have these giant bullae. Most people with COPD from emphysema have many small areas of damaged air sacs in their lungs. These small damaged air sacs are often scattered throughout both lungs and therefore would not benefit from a bullectomy.

## What is lung volume reduction surgery (LVRS)?

Some patients with emphysema have greater air sac damage in the upper portions of both lungs and healthier air sacs in the bottom portions. In these patients Lung volume reduction surgery (LVRS) can remove the upper portion of both lungs. Like a bullectomy, LVRS involves removing non-working air sacs. However, unlike the bullectomy, LVRS sometimes removes some good air sacs as well. After taking out this mostly non-working part of

the lung, you may breathe better. Because LVRS is a major surgery, you must have a strong heart and healthy remaining lungs after the surgery to make the risk of having the surgery worthwhile. You must also show that you are willing to keep physically fit by stopping smoking and completing a pulmonary rehabilitation program (See ATS Patient Information Series fact sheet on Pulmonary Rehabilitation) before having LVRS.

## What is Endobronchial Valve Volume Reduction?

Recently, endobronchial (N-doe-bronk-E-ul) valves have become available to help with breathlessness for some patients with severe emphysema. Usually three to five tiny valves are placed in the airways to collapse non-working portions of lung in a similar way as LVRS but without major surgery. This therapy is currently available at specialized medical centers where expertise is available to select appropriate candidates based on advanced testing including specific lung function testing and lung scans.

## What about lung transplantation?

Lung transplantation replaces one or both of your lungs with a lung or lungs from an organ donor. The best COPD candidates for lung

transplantation have no other major health problems, and have such severe lung disease that the benefits of surgery outweigh the risks. Most patients with COPD are not good candidates for a lung transplant because of the risk of serious complications. Generally patients over age 70 are not candidates for lung transplantation because of poorer outcomes (See ATS Patient Information Series fact sheets on Lung Transplantation and Candidate Selection).

### What if I need general surgery for some other condition?

Like anyone else, the more health problems you have, the greater the risk of complications during or after surgery. When you have COPD, your chances of complications from surgery are increased. Before having any surgery, discuss with your healthcare provider the type of surgery you are having, the possible risks, and what you need to do to lessen your chances of having problems after the surgery.

### Are there tests or treatments I should have before any general surgery?

Before surgery, it is important that your healthcare provider knows the condition of your lungs. One or more breathing tests may be ordered to test your lungs (See ATS Patient Information Series fact sheet on Pulmonary Function Tests). Before the surgery you may be given additional medicines such as steroids or antibiotics. Your healthcare provider may also contact your surgeon to discuss your surgery. Besides knowing the condition of your lungs, your healthcare team will want to be sure that you are in good physical shape before surgery. They may suggest that you enter a pulmonary rehabilitation program (See ATS Patient Information Series fact sheet on Pulmonary Rehabilitation). If a pulmonary rehabilitation program is not available, you should begin an exercise program of your own to build up your strength. Walking is a very good form of exercise. For a directory of pulmonary rehabilitation programs in the US, see [www.livebetter.org](http://www.livebetter.org).

If you smoke, you must stop at least 4 weeks before surgery, and then hopefully for good. For help quitting smoking go to [www.thoracic.org/patients](http://www.thoracic.org/patients).

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## Rx Action Steps

- ✓ Surgery (bullectomy, LVRS, and lung transplant) is not the best treatment option for most patients with COPD. Most people receive medical treatment for COPD.
- ✓ Be in the best physical shape possible before any surgery.
- ✓ If you smoke, stop smoking at least 4 weeks before having any type of surgery.
- ✓ Let your healthcare provider and surgeon know you are having surgery so they can help you be sure your COPD and any other health problems are under good control.
- ✓ If you can, enroll in a pulmonary rehabilitation program. If a program is not available, begin a walking program you can do on your own.

### Healthcare Provider's Contact Number:

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### Resources:

#### American Thoracic Society (ATS)

<http://www.thoracic.org>

- Pulmonary Rehabilitation
- Transplantation

<http://www.livebetter.org>

#### American Lung Association

<http://www.lung.org/lung-health-and-diseases/lung-disease-lookup/copd/diagnosing-and-treating/surgery.html>

#### American College of Chest Physicians

<http://www.chestnet.org/Foundation/Patient-Education-Resources/COPD>

#### National Emphysema Treatment Trial (NETT)

<http://www.nhlbi.nih.gov/health-pro/resources/lung/national-emphysema-treatment-trial>

#### COPD Foundation

<http://www.copdfoundation.org/>

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