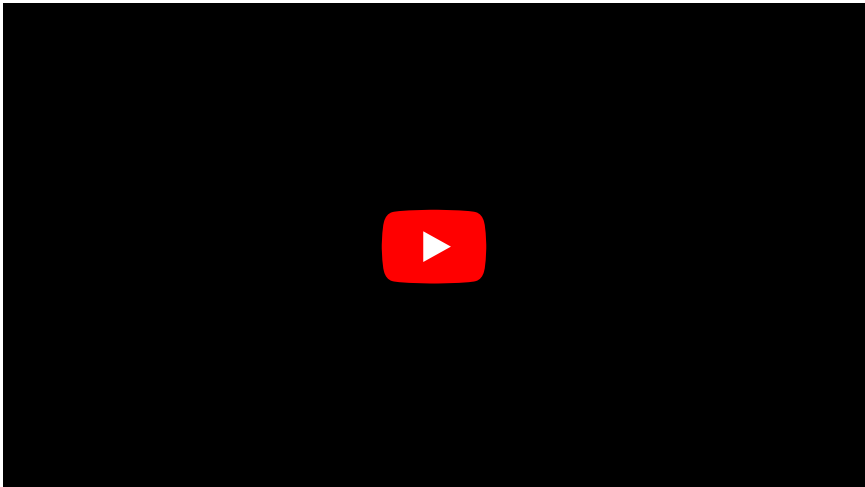


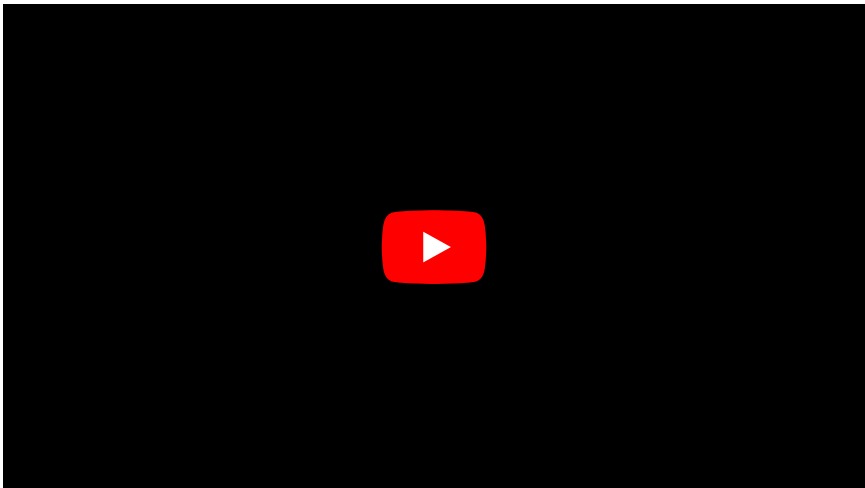
# Bronchiectasis

**Bronchiectasis** also known as **Acquired bronchiectasis** or **Congenital bronchiectasis** is a lung disease that usually results from an infection or other condition that injures the walls of the airways in the lungs. The airways are the tubes that carry air in and out of the lungs.

## Bronchiectasis:



## Bronchiectasis 2:



This injury is the beginning of a cycle in which your airways slowly lose their ability to clear out mucus. The mucus builds up and creates an environment in which bacteria can grow. This leads to repeated serious lung infections. Each infection causes more damage to your airways. Over time, your airways become stretched out, flabby, and scarred. They can no longer move air in and out. This can affect how much oxygen reaches your body organs. If your lungs cannot move enough oxygen into your body, bronchiectasis can lead to serious illness, including heart failure.

Bronchiectasis can affect just one section of one of your lungs or many sections of both lungs.

Bronchiectasis usually begins in childhood, but symptoms may not appear until months or even years after you have started having repeated lung infections.

## Types

There are two types of bronchiectasis:

- Congenital bronchiectasis usually affects infants and children. It results from a problem in the development of the lungs in the fetus.
- Acquired bronchiectasis occurs in adults and older children. It is more common.

## Signs and Symptoms

The most common signs and symptoms are:

- Daily cough, over months or years
- Daily production of large amounts of mucus, or phlegm (flem)
- Repeated lung infections
- Shortness of breath
- Wheezing
- Chest pain

Over time, more serious symptoms may develop, including:

- Coughing up blood or bloody mucus
- Weight loss
- Fatigue
- Sinus drainage

## Causes

Bronchiectasis is caused by injury to the lower airways. This injury may be caused by another disease, including:

- Cystic fibrosis, which leads to almost half of the cases of bronchiectasis in the United States.
- Severe pneumonia.
- Whooping cough (uncommon because most people are now vaccinated against it).
- Tuberculosis (TB) and other similar infections.
- Immunodeficiency disorders, such as HIV infection and AIDS.
- Allergic bronchopulmonary aspergillosis, an allergic reaction to a fungus called aspergillus that causes swelling in the airways.
- Kartagener's Syndrome, a rare inherited disease that involves the cilia (sil'-ee-ah). These are small hair-like structures that line your airways and normally clear out mucus.
- Other disorders that affect the function of the cilia.

Other conditions that can injure the lower airways and lead to bronchiectasis include:

- Blockage of your airways by a growth or a noncancerous tumor
- Blockage of your airways by something you inhaled—for example, a piece of a toy or a peanut that you inhaled when you were a child
- Fungal infections

## Diagnosis

There is no one specific test for bronchiectasis. Even in its later stages, the signs of the disease are similar to those of other conditions, so those conditions must be ruled out before a diagnosis can be made. Your doctor may suspect bronchiectasis if you have a daily cough that produces large amounts of mucus.

Your doctor will determine if you have bronchiectasis by conducting a series of tests to:

- Identify any underlying causes that need to be treated
- Rule out other causes of your symptoms
- Determine the amount of damage to your lungs

The most commonly used tests to diagnose bronchiectasis are:

- Chest x ray. A chest x-ray takes a picture of your heart and lungs. It can show infection and scarring of your airway walls.
- Computed tomography (CT) scan. This test provides a computer generated image of your airways and other tissue in your lungs. It has more detail than a regular chest x ray. A CT scan is the defining test for bronchiectasis. It can show how much damage has been done to the airways and where the damage is.

Other tests your doctor may conduct include:

- Blood tests. These tests can show if you have a disease or condition that can lead to bronchiectasis. They can also show if you have an infection or low levels of certain infection-fighting blood cells.
- Sputum culture. Sputum contains mucus and often pus, blood, or bacteria. Laboratory tests of a sample of your sputum can show if you have bacteria, fungi, or tuberculosis.
- Lung function tests. These tests measure how well your lungs move air in and out. These tests show how much lung damage you have.
- Sweat test or other tests for cystic fibrosis. This is a patch test on your arm that measures the amount of salt (sodium chloride) in your sweat.

If your condition does not respond to treatment, your doctor may request a fiberoptic bronchoscopy. In this procedure, your doctor inserts a long narrow, flexible tube with a light on the end through your nose or mouth into your airways. This tube is called a bronchoscope. It provides a video image of the airways and allows your doctor to collect samples of mucus. This test can show if something is blocking your lungs. You most likely would have this procedure as an outpatient in a hospital, under local anesthesia.

# Treatment

Bronchiectasis cannot be cured, but with proper care, most people who have it can enjoy a good quality of life. The goals of treatment are to:

- Treat any underlying conditions and respiratory infections
- Help remove mucus from your lungs
- Prevent complications

Early diagnosis and treatment of bronchiectasis are important. The sooner your doctor can start treating any underlying conditions that may be causing the bronchiectasis, the better the chances of preventing further damage to your lungs. The mainstays of treatment for bronchiectasis are:

- Medications, especially antibiotics
- Chest physical therapy (CPT)

## Medications

The main medicines used to treat bronchiectasis are:

- **Antibiotics** are the main treatment for the repeated respiratory infections that bronchiectasis causes. Doctors usually prescribe oral antibiotics to treat these infections. For hard-to-treat infections, you may be given antibiotics through a tube into a vein in your arm. Your doctor may be able to help you arrange for a home care provider to give you intravenous antibiotics at home.
- **Bronchodilators** open your airways by relaxing the muscles around them. Inhaled bronchodilators can be breathed in as a fine mist from a metered-dose inhaler (puffer) or a nebulizer (ne'-byu-lye"-zer). These medicines work quickly because the drug goes directly into your lungs. Doctors usually recommend that you use a bronchodilator right before you do your chest physical therapy.
- **Corticosteroids** help reduce inflammation in your lungs. They work best when you take them with an inhaler.
- **Mucus thinners**, such as acetylcysteine, loosen the mucus.
- **Expectorants** help loosen the mucus in your lungs. They often come in combination with decongestants, which may provide additional relief. You do not need a prescription for them.
- **Saline nasal washes** help control sinusitis.

## Chest Physical Therapy

CPT is also called chest clapping or percussion. It involves pounding your chest and back over and over with your hands or a device to loosen the mucus from your lungs so that you can cough it up. You should do CPT for bronchiectasis three or four times each day.

CPT is often called postural drainage. This means that you sit or lie on your stomach with your head down while you do CPT. This lets gravity and force help drain the mucus from your lungs.

Some people find CPT difficult or uncomfortable to do. Several devices have been developed that may help with CPT. The devices include:

- An electric chest clapper, known as a mechanical percussor.
- A removable inflatable therapy vest that uses high-frequency air waves to force the mucus that is deep in your lungs toward the upper airways so you can cough it up.
- A "flutter" device, a small handheld device that you breathe out through. It causes vibrations that dislodge the mucus.
- A positive expiratory pressure mask that creates vibrations that help break the mucus loose from the airway walls.

Several breathing techniques may also help loosen some of the mucus so you can cough it up. These techniques include:

- Forced expiration technique (FET) forcing out a couple of breaths or huffs and then doing relaxed breathing
- Active cycle breathing (ACB) FET with deep breathing exercises that can loosen the mucus in your lungs

Depending on how serious your condition is, your doctor may also recommend:

- Oxygen therapy.
- Surgery to remove a section of your lung. Doctors usually do this only if other treatments have not helped and only one part of your lung is affected. If you have major bleeding, your doctor may recommend either surgery to remove the bleeding part of your lung or a procedure to control the bleeding.

## Living with Bronchiectasis

If you have bronchiectasis, you should work closely with your doctor to develop self-management skills that can improve your quality of life. This means that you need to learn as much as you can about bronchiectasis and any underlying conditions that you have. Avoiding respiratory infections should be a top priority. To do this:

- Have annual flu vaccinations
- Have pneumonia vaccinations as directed by your doctor

- Get regular aerobic exercise (walking and swimming, for example) to help loosen the mucus so it can be coughed up
- Eat a healthy diet
- Drink lots of fluids
- Wash your hands often
- Maintain a healthy weight.

Other things you can do to improve your condition include:

- Do not smoke
- Avoid exposure to tobacco smoke
- Avoid fumes and dust that can irritate your lungs

## Related Problems

Bronchiectasis can also lead to other serious health conditions, including:

- Collapsed lung
- Heart failure, if the disease advances to affect all parts of your airways
- Brain abscess

## Other Resources

Lung Diseases Information for the Public (<https://web.archive.org/web/20130126042218/http://www.nhlbi.nih.gov/health/public/lung/index.htm>)

Bronchiectasis (<https://web.archive.org/web/20130125002245/http://www.nlm.nih.gov/medlineplus/ency/article/000144.htm>) (MedlinePlus)

## External Links

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