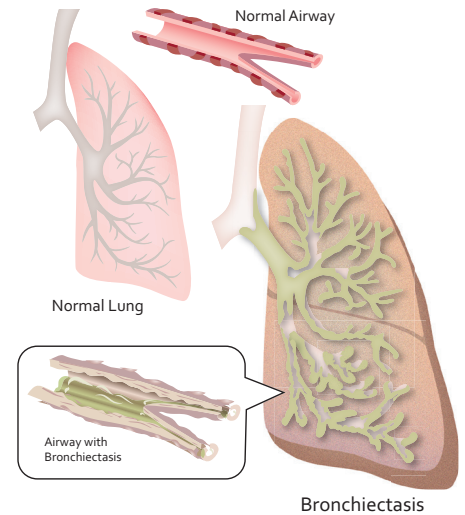


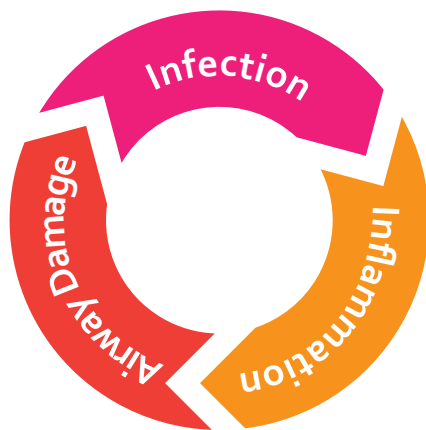
What is Bronchiectasis?

Part 1

Bronchiectasis (bron-kee-eck-tuh-sis) is a lung condition that causes cough, sputum production, and recurrent respiratory infections. The symptoms are caused by abnormal dilation (widening) of the airways of the lung (bronchi). In some cases only one airway is affected. In other cases, many are affected. In very severe cases, dilation of the airways occurs throughout the lungs.



This dilation makes it difficult to bring up secretions (sputum, phlegm, mucus) from the lower airways. These sticky secretions provide an ideal place for many kinds of germs to live and grow. This leads to infection and overgrowth of bacteria which leads to inflammation (swelling and irritation). Infection and inflammation further damage the airways and cause more dilation and worsening bronchiectasis. This process is sometimes called the “vicious cycle hypothesis” of bronchiectasis.



What Causes Bronchiectasis?

There are many causes of bronchiectasis, including:

1. genetic diseases (such as cystic fibrosis and primary ciliary dyskinesia)
2. problems with the immune system (reduced ability to fight infections)
3. past lung infections
4. problems with swallowing causing aspiration of food or fluids into the lungs

In about 40% of cases, however, the cause of bronchiectasis is unknown. These cases are called “idiopathic bronchiectasis.” Your healthcare provider may order certain tests to see if you have a treatable cause of your bronchiectasis. Unfortunately, bronchiectasis is not reversible, but it can be treated to reduce symptoms and try to limit progression. Treatment can keep the bronchiectasis from getting worse, and help stop the vicious cycle of repeated infections. Rarely, in patients with bronchiectasis in only one area of the lung, surgical removal of that portion of the lung can cure the condition.

What are the Symptoms of Bronchiectasis?

The most common symptom of bronchiectasis is cough, which is usually productive of sputum (phlegm). The cough may become worse at times, and a person may also have fever, chills, night sweats, tiredness, and a change in the color and amount of sputum. When this happens it is called an exacerbation (or flare-up) of bronchiectasis.

Other symptoms can include:

- Shortness of breath or air hunger
- Unintended weight loss
- Coughing up blood (hemoptysis)
- Chest pain or tightness

These symptoms usually develop over many years and get worse over time. Many patients with bronchiectasis report a history of recurrent bronchitis or pneumonias since childhood for many years. Some people with bronchiectasis may also have sinus disease which can also contribute to cough at times.

How is Bronchiectasis Diagnosed?

Bronchiectasis is diagnosed by x-ray imaging, almost always with a CT of the chest (CAT scan). The CT scan will show the location and severity of the bronchiectasis, and may give clues about its cause. Your healthcare provider may also order lung function (breathing tests) and cultures of your sputum to look for specific germs. These cultures will help determine which antibiotics will be most effective during exacerbations. In some cases your doctor may order a bronchoscopy (bronck-ah-sko-pee), in which a long tube with a light and camera on the end is placed into your airways to retrieve mucus. (For more information on lung function testing and bronchoscopy, see the ATS Patient Information series at www.thoracic.org/patients)



What Can You Expect Long Term?

Bronchiectasis is a condition that usually develops over time, and worsens with repeated infections. Therefore the goals of treatment are preventing infections and exacerbations. It is important to try to help the lungs stay as healthy as possible with good lung function. You should contact your healthcare provider without delay if you develop symptoms of an exacerbation. By sticking with the treatments prescribed by your healthcare provider, you have the best chance of controlling this condition and keeping it from getting worse. Get vaccines advised for you to help avoid infections. Many people can live for years with bronchiectasis. The more involved the lungs are the more risk there is of loss of function and death. For information on treatment, see Part 2, “Treatment of Bronchiectasis” at www.thoracic.org/patients.

Action Steps:

- ✓ Call your healthcare provider if you have a change in cough, fever, or other new symptoms.
- ✓ Take your medicines and follow the treatment plan you make with your healthcare provider.
- ✓ Avoid things that can make lung disease worse such as smoking and air pollution.
- ✓ Get recommended vaccines such as flu and COVID, use good handwashing, and avoid ill contacts as possible.

Healthcare Provider’s Contact Number:

Authors: Colin Swenson MD, Dean Schraufnagel MD, Ruxana Sadikot MD, MRCP (UK)

Reviewers: Mark Metersky MD; Marianna Sockrider MD, DrPH

Resources:

American Lung Association

- <http://www.lung.org/lung-health-and-diseases/lung-disease-lookup/bronchiectasis/learn-about-bronchiectasis.html>

British Lung Foundation

- www.blf.org.uk/support-for-you/bronchiectasis

Lung Foundation –Australia

- <http://lungfoundation.com.au/wp-content/uploads/2013/12/Bronchiectasis-Sept-2014.pdf>

National Heart, Lung and Blood Institute

- <https://www.nhlbi.nih.gov/health/health-topics/topics/brn>

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Treating Bronchiectasis

Bronchiectasis (bron-kee-eck-tuh-sis) is a lung condition that causes cough, sputum production, and recurrent respiratory infections. (Also see “What is Bronchiectasis?” at www.thoracic.org/patients). Because bronchiectasis is a condition that develops over many years and worsens with repeated infections, the main treatment goal is to reduce stagnant secretions (mucus, sputum) in the airways and germs contained in those secretions.



Your healthcare provider will help you figure out the best treatment plan for you. There are two important parts of bronchiectasis treatment:

- **Maintenance:** What you do every day. This usually includes airway clearance, changes in your lifestyle, and other actions you can take to prevent infections and lung damage.
- **Exacerbations (eg-zass-er-bay-shuns):** What you do when you get sick and have a change in symptoms. This usually includes increasing airway clearance and taking antibiotics to treat infection.

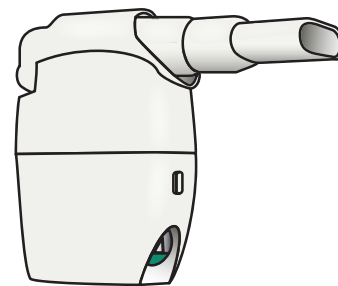
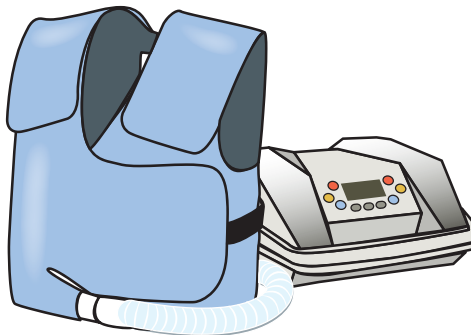
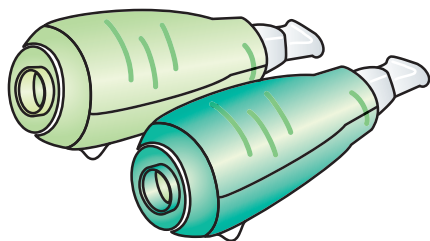
What are airway clearance techniques?

Depending on how severe your bronchiectasis is and how much mucus is produced in your airways, your healthcare provider may suggest that you learn to do one or more of the following:

Airway Clearance Methods

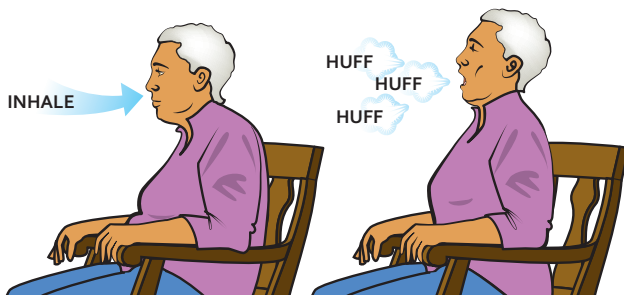
- chest physiotherapy involves chest clapping in various positions to move mucus up to the windpipe so that you can cough it out.
- handheld positive expiratory pressure (PEP) devices are used to loosen mucus by creating vibration while breathing through the device.
- percussion devices which can include mechanical percussors and percussive vests (high frequency chest wall oscillation) are used to loosen mucus and move it to the windpipe to cough out.

All forms of airway clearance depend on good coughs to move loose mucus out. You can learn techniques such as huffing to improve your cough strength and effort. You want to bring mucus up and out of the lungs!



Coughing Technique

During and after your airway clearance routine, you can use your cough to bring up the loosened phlegm. The most common cough technique is called the “huff cough.” It is similar to breathing fog onto your glasses to clean them: start by taking a deep breath through your nose. Exhaling in 3 equal breaths, pull your belly inward to force the air from your lungs while making a “huff” sound in the back of your throat. Repeat this 2-3 times during and after your airway clearance routine.



Inhaled (nebulized) Medications

Medicines may be inhaled to help open the airways and loosen mucus. A bronchodilator such as albuterol or levalbuterol can help relieve or prevent spasm of the airway muscles. Hypertonic saline is a concentrated salt water solution that can help loosen secretions in your airways. Often inhaled medicines are used before or during airway clearance to help bring mucus up.

Recognizing an exacerbation

While bronchiectasis is a long-term condition, you may occasionally become more ill. This is called an acute exacerbation. Often this is due to a new respiratory infection or overgrowth of bacteria that are chronic. It is important to recognize the following signs and symptoms of an exacerbation:

- Increased sputum production, and/or change in color
- Blood in sputum
- Fever
- Increased tiredness
- Worsening shortness of breath
- Unintentional weight loss, lack of appetite

If you develop any of these symptoms, contact your healthcare provider right away (promptly). You can increase your airway clearance to help get the extra mucus up. You may need antibiotics to treat the infection. Remember that repeated exacerbations can cause bronchiectasis to worsen over time.

What lifestyle changes can you make to help?

- Stay hydrated by drinking plenty of water. If you become dehydrated the mucus will also become dehydrated, making it thick and sticky.
- Exercise regularly. Jogging, biking, or brisk walking helps loosen mucus in the chest, keeping your airways clear of secretions. Regular exercise decreases exacerbations and improves quality of life in patients with bronchiectasis.
- If you smoke or vape, stop. It is also important to avoid exposure to smoke, vapors, and other air pollutants.
- Get your yearly flu shot and ask your provider if you are up to date on your Pneumococcal pneumonia vaccination. (For more information, go to www.thoracic.org/patients)
- Eat well. Maintain a healthy weight by eating a healthy diet.

Authors: Colin Swenson MD, Dean Schraufnagel MD, Ruxana Sadikot MD, MRCP(UK)

Reviewers: Mark Metersky MD, Marianna Sockrider MD, DrPH, Timothy R. Aksamit, MD

Rx Action Steps

- ✓ Take action to help stay healthy and control bronchiectasis.
- ✓ Recognize when you have a change in symptoms and signs of an exacerbation and contact your healthcare provider promptly.
- ✓ Make sure to follow your daily treatment plan and do airway clearance as advised by your healthcare provider.

Healthcare Provider's Contact Number:

Resources

American Thoracic Society

<https://www.thoracic.org/patients>

- Pulmonary rehabilitation
- What is bronchiectasis?

National Heart, Lung, Blood Institute (NIH)

<https://www.nhlbi.nih.gov/health-topics/bronchiectasis>

COPD Foundation

www.copdfoundation.org

NTM Info & Research, Inc.

<https://www.ntminfo.org/>

American Lung Association

<https://www.lung.org/lung-health-diseases/lung-disease-lookup/bronchiectasis/learn-about-bronchiectasis>

Bronchiectasis and NTM Initiative

www.BronchiectasisandNTMInitiative.org

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