



Bronchiectasis

Bronchiectasis (pronounced bron-kee-ek'-tas-is) is a disorder of the airways within the lungs. Inflammation and infections cause damage to the airways with alteration in the lining layer of the airways. The airways become distorted and enlarged. Enlargement can be uniform or irregular. Mucus can collect in the airways and is difficult to clear because of the damage to the normal ways the airways clear the mucus. This can lead to episodes of infection. Early diagnosis and treatment of bronchiectasis and the infections that occur are very important. You may be born with bronchiectasis, or you may acquire it as an adult or child through one or more of the following ways:

- Inadvertent inhalation of mouth or stomach material into your lungs, causing chronic airway inflammation.
- Severe gastroesophageal reflux (heartburn) which occurs when the valve or sphincter connecting your esophagus and stomach is too relaxed; may allow a backward flow of stomach contents to enter your lungs and irritate the airways. Impaired ability to swallow may also cause saliva or food to enter the lungs.
- Having another chronic lung condition, such as cystic fibrosis, allergic aspergillosis, tuberculosis, other mycobacteria diseases such as MAI, whooping cough (pertussis), or an immune deficiency disease or severe or repeated episodes pneumonia.
- Disorders that affect the function of the cilia (small hairs that line the airways).
- Obstruction in your airways because of a growth or tumor.
- Kartagener's Syndrome, a rare inherited disease that combines bronchiectasis, loss of ability to clear mucus and chronic sinusitis.

Development of Bronchiectasis

First, inflammation to the walls of the airway occurs from any mechanism (listed in the previous section). The inflammation causes injury to the airways. The resulting loss of the normal defenses of the respiratory tract leads to the loss of ability to clear mucus, making the airways susceptible to infections. Repeated lung infections can cause worsening of the damage to the airway walls.

Symptoms of Brochiectasis

Symptoms of bronchiectasis include a cough with raising mucus from the lungs. With infections the mucus may be discolored and foul smelling, sometimes containing blood. Fatigue, weight loss, shortness of breath and abnormal chest sounds can occur. Occasionally people with bronchiectasis also have chronic sinusitis that requires further evaluation since bronchiectasis and sinusitis may be due to other diseases. If bronchiectasis is not treated, you may experience increasing shortness of breath, rounding at the tips of the fingers (clubbing) from chronic lung infection and possibly heart failure.

Diagnosis of Bronchiectasis

The evaluation for bronchiectasis usually includes:

- A complete medical history and physical examination by your physician.
- A chest X-ray.
- Breathing tests, called pulmonary function tests, to determine the presence and severity of abnormal airflow out of the lungs.
- A CAT scan (a specialized X-ray which produces detailed slice-like pictures) of the lungs.

Treatment of Bronchiectasis

Bronchiectasis can be treated in a number of ways. Your health care provider will evaluate your case and recommend the best treatment(s) for you.

- **Bronchodilator Medicine** - A bronchodilator medicine, which opens the airways by relaxing the muscles surrounding the airways, is usually recommended. This type of medicine is available as a metered-dose-inhaler (“puffer”). Commonly used inhaled bronchodilators include Proventil®, Ventolin® (albuterol) and Maxair® (pirbuterol). Theophylline is an oral (tablet or capsule) bronchodilator that may be beneficial in some people, but it has a small margin of beneficial effect versus side effects, so it is often used as a last resort.
- **Anti-Inflammatory Medicine** - A steroid medicine, such as oral prednisone used for acute worsening of inflammation or various inhaled medications from a puffer such as Flovent®, Azmacort®, and others is used regularly to help with chronic airway inflammation. Oral prednisone is rarely used for chronic treatment in those that a puffer does not provide adequate control.
- **Antibiotics** - If a specific infection, such as Mycobacteria, is found to be the cause of the bronchiectasis, then antibiotics are tailored to the underlying cause. Antibiotics are also used for episodes of infection. Rarely continuous treatment with an antibiotic can help bronchiectasis, but drug-resistant organisms can develop in the lungs. Therefore, your health care provider will prescribe an antibiotic based on your signs, symptoms and appropriate sputum cultures. For example, you may need an antibiotic

only when you experience an acute worsening of your symptoms with increased shortness of breath, cough, blood in the mucus or an increase in the amount and thickness of the mucus.

- Treatment of sinusitis - salt water nasal washes help control sinusitis, which causes drainage into the airways and subsequent infections. A prescription steroid nasal spray can decrease swelling in the nose.
- Treatment of gastroesophageal reflux (GERD) - Elevate the head of your bed six to eight inches by placing the legs on blocks. Avoid consuming food, alcohol, coffee, cola or tea for several hours before bedtime as these may worsen the acid reflux. You may need antacids or other stronger medications like Zantac®, Pepcid®, Protonix®, Prilosec®, Nexium®, or others to control the degree of reflux because stomach acids can irritate the lungs. If your case is severe and not well controlled with medications, you may need surgery to tighten the sphincter at the base of the esophagus.

Further Measures

Any specific condition contributing to bronchiectasis should be treated. Examples include: Treatment of allergic bronchopulmonary aspergillosis with steroids, treatment of chronic infections such as Non-Tuberculous Mycobacteria. Surgery is occasionally indicated only if bronchiectasis is very localized in the lung and medical treatment and other therapies are not effective.

Patient Responsibilities in Managing Bronchiectasis

- Quit smoking and avoid exposure to passive smoke. Ask your health care provider for techniques to help you quit smoking.
- Get a flu shot yearly and a pneumococcal vaccine every 7 years until you are over age 65 when you will only need one dose for full immunity.
- Exercise regularly as directed by your health care provider. This helps you breathe easier by improving your muscle strength and tone and helps improve mucous clearance from the airways.
- Eat a well-balanced diet and drink plenty of fluids to keep your secretions thinned. Avoid dehydrating beverages, such as those that contain caffeine.