

All About BRONCHIECTASIS



**Bronchiectasis
and NTM 360°**

COPD Foundation

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WHAT IS BRONCHIECTASIS?

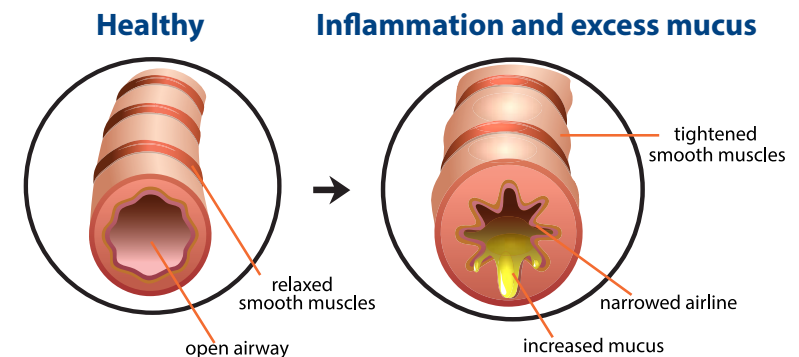
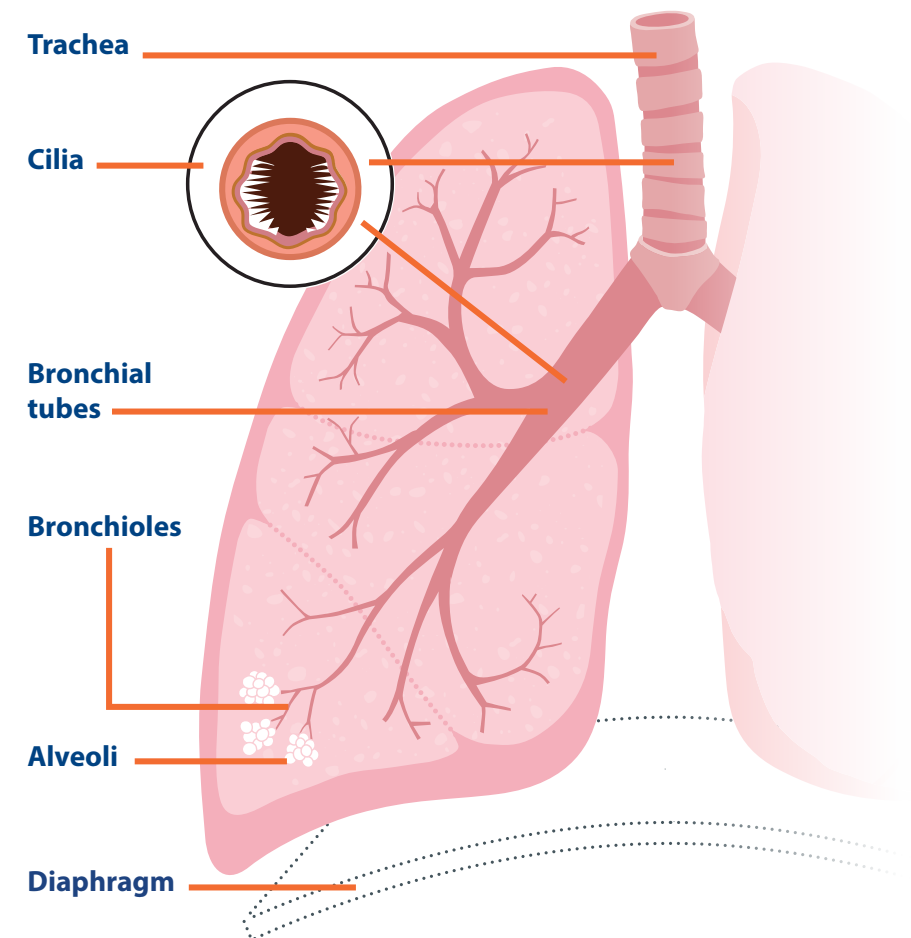
Bronchiectasis can be difficult to describe if you aren't familiar with how the lungs work. Let's take a moment to describe how you breathe!

Before air enters your lungs, it travels into your trachea (windpipe) from your mouth or nose. There are many passageways in your lungs through which air travels. These are called airways. The larger airways are called bronchial tubes. These airways are lined with tiny hair-like structures called cilia. The cilia help to remove mucus by sweeping it through the bronchial tubes so it can be expelled. After the air moves through the bronchial tubes, it fills tiny air sacs called alveoli. The alveoli help to transfer the oxygen from your lungs to the bloodstream.

In bronchiectasis, the bronchial tubes become widened, scarred, and swollen. This can cause difficulty breathing. The cilia in these airways become damaged and are unable to clear mucus from the bronchial tubes. When mucus remains in the airway, it can allow bacteria to grow and cause infections. The airway then becomes more damaged and the bronchiectasis worsens. The mucus pooling can also lead to a cough with varying amounts of mucus.

Bronchiectasis is a progressive disease. There is no cure; however, there are treatments that can help lessen symptoms. Read on to learn more about how to manage this condition.

PARTS OF THE RESPIRATORY SYSTEM



BRONCHIECTASIS FACTS

Bronchiectasis affects nearly

150 per **100,000**

in the United States.¹

This number may underestimate the total number of people with bronchiectasis in the U.S.

Prevalence of

BRONCHIECTASIS

increases exponentially



among people¹

65+

The rate of

BRONCHIECTASIS

cases is increasing by

8%



Some studies suggest the percentage may be even higher.¹

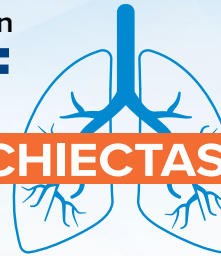
BRONCHIECTASIS

is

NOT COPD

In more than
HALF
of

BRONCHIECTASIS
CASES



HEALTH CARE
PROVIDERS



are unable
to determine
the cause

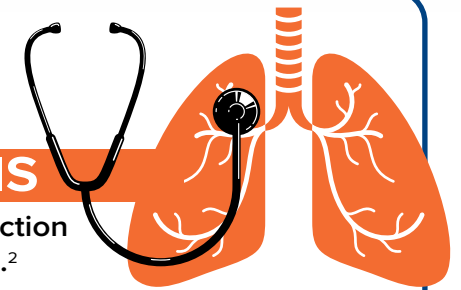
This is referred to as idiopathic bronchiectasis.²

It is reported that

33-42% of

BRONCHIECTASIS

cases happen after a lung infection
causes damage to the airways.²



Often there is a delay of years in diagnosing

BRONCHIECTASIS

or it is misdiagnosed.



Smoking does not cause

BRONCHIECTASIS

however, it can make your
symptoms worse.

CAUSES OF BRONCHIECTASIS

SEVERE LUNG INFECTIONS

Repeated lung infections are the most common known cause of bronchiectasis. Infections that cause bronchiectasis include pneumonia, nontuberculous mycobacterial (NTM) infection, influenza, tuberculosis, whooping cough, and measles. These infections can cause the airways to become inflamed and damaged, which can lead to bronchiectasis.

Frequent, uncontrolled infections may over time lead to more progressive bronchiectasis with an increased burden to those that have it.

LUNG INJURY

Lungs can become injured by food and liquids "going down the wrong tube." This is called aspiration. When this happens often over a period of months or years, the food and liquid can cause inflammation and damage to the airways that can result in bronchiectasis. Although a less common cause, injuries to the lungs, such as smoke inhalation, can also lead to bronchiectasis.

IMMUNE DEFICIENCIES

When your immune system is weak, you are more likely to get lung infections that can lead to bronchiectasis. A weakened immune system may be caused by a decrease in the body's proteins that fight off infections. These proteins are called immunoglobulins.

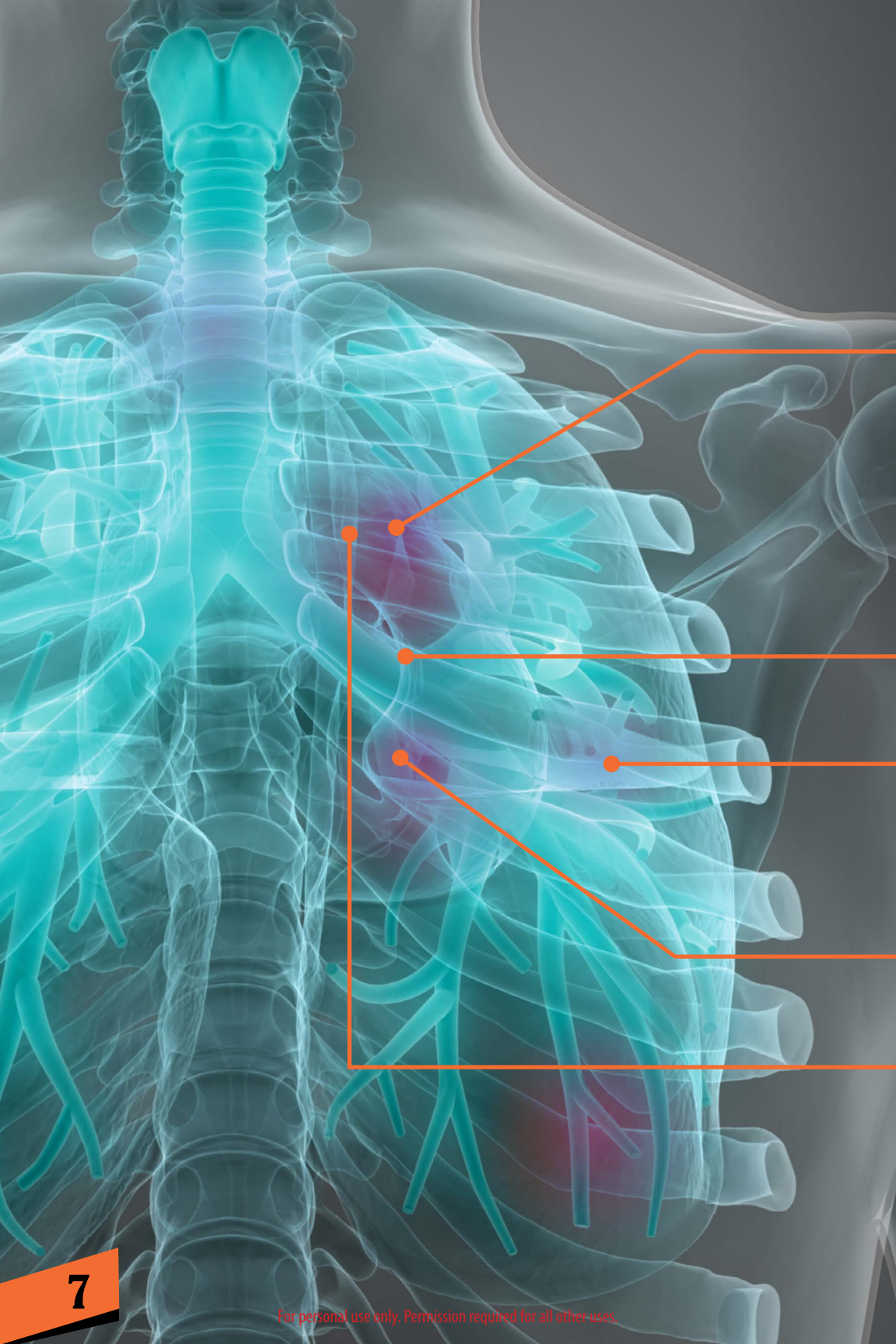
INFLAMMATORY DISEASES

Some diseases that cause inflammation in other parts of the body can also cause inflammation in the airways and lead to bronchiectasis. Examples of these diseases include:

- Ulcerative colitis: A disease of the large intestine
- Crohn's disease: A condition that can affect any part of the gastrointestinal tract
- Rheumatoid arthritis: A disease that affects the joints
- Sjögren's syndrome: A condition that affects the eyes, mouth, and lungs

INHERITED (GENETIC) DISORDERS

Some people are born with genes that may lead to bronchiectasis. These include conditions such as cystic fibrosis and primary ciliary dyskinesia. In these diseases, there are problems with mucus amount and consistency due to either increased production or problems with the cilia working properly, which can cause bronchiectasis.



SYMPTOMS OF BRONCHIECTASIS

Many people have symptoms of bronchiectasis for months or even years before a diagnosis of bronchiectasis is made. This is especially true for people who have mild symptoms that begin slowly. Symptoms of bronchiectasis include:

Cough and mucus production:

The main symptom of bronchiectasis is a cough with varying amounts of mucus production. Nearly all individuals with significant bronchiectasis cough every day for months, and sometimes, for years. Some individuals may also cough up blood. Coughing up blood is referred to as hemoptysis and requires medical attention.

Most people with bronchiectasis cough up mucus (sputum) every day. Some people with bronchiectasis may cough up nearly a cup of sputum each day.

Shortness of breath with activity:

When the airways are swollen and scarred, it can be difficult to breathe while walking, climbing stairs, or doing other activities.

Frequent lung infections:

People with bronchiectasis get more lung infections because the mucus isn't cleared from the lungs. When this happens, bacteria stay in the lungs instead of being coughed out, causing an infection to occur. Repeat pneumonia in the same part of the lung is common in bronchiectasis.

Tiredness (fatigue):

It is common for people with bronchiectasis to experience increased tiredness, which can limit daily activities.

Chest pain:

People with bronchiectasis may experience chest pain that worsens when taking deep breaths.

GETTING TESTED

Medical tests can help determine if you have bronchiectasis. They can also be used to investigate the cause of your bronchiectasis. X-rays are the most commonly used tests to diagnose and/or confirm bronchiectasis. A common type of x-ray is a computed tomography (CT) scan of your chest.

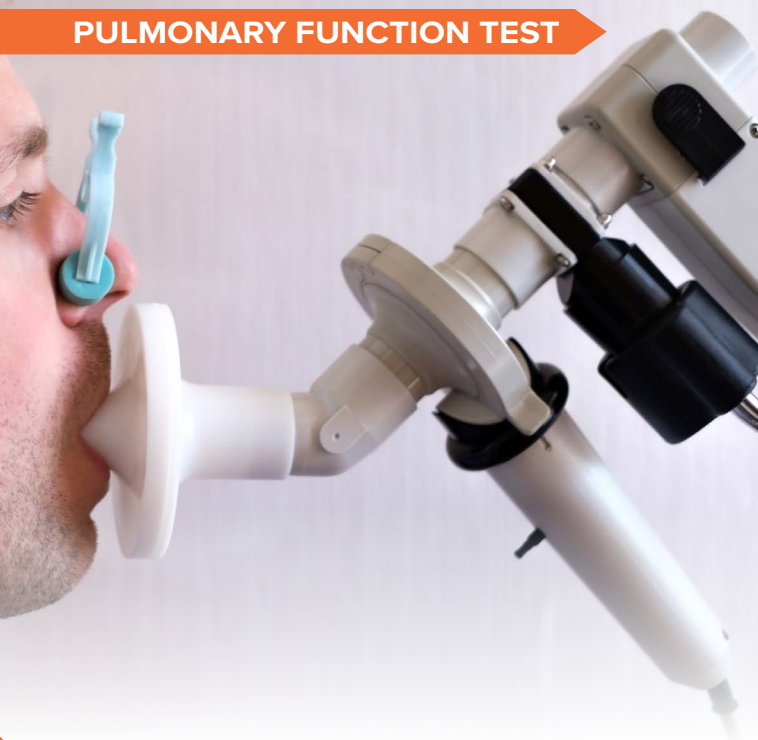
CHEST CT

A CT scan of the chest uses a special kind of x-ray that shows a very detailed picture of your lungs. This scan can help your health care provider see the widening of your airways and how much of your lungs are affected.

What should I do to prepare for a chest CT scan and what should I expect?

- Wear comfortable, loose-fitting clothing.
- You may be allowed to keep your clothes on or you may need to wear a gown. You will be asked to remove metal objects such as necklaces and glasses.
- The CT scanner looks like a huge donut.
- You will be lying on a movable exam table with a padded surface, which is shaped to keep you from falling. The technician will help you get into the position that will provide the clearest images. Often, this position is lying on your back.
- The table will move you through the donut hole to determine the correct starting position for the scans. Then it will move again through the donut hole to take the images.
- You may be asked to hold your breath for a few seconds during scanning.
- CT scanning takes less than 30 seconds. The entire process is usually completed within 30 minutes.

PULMONARY FUNCTION TEST



A pulmonary function test (PFT) is a breathing test that measures how much air moves in and out of your lungs and how fast it moves. This test helps your health care provider understand how well your lungs are working. It may also help determine the cause of your shortness of breath.

What should I do to prepare for a PFT and what should I expect?

- You will be asked to sit in a chair near the testing machine or on a seat in a clear glass booth – similar to a phone booth.
- Before starting, the technician will place a soft clip on your nose.
- You will breathe through your mouth into a tube to perform the testing.
- The technician will explain the test to you and coach you on how to breathe. For some parts of the test, you will be asked to breathe normally. For other parts of the test, you may be asked to breathe fast and deep.
- For some people, breathing fast and deep makes them cough, feel dizzy, or feel short of breath. Don't worry. Tell the technician how you feel, and he or she will give you time to rest and try again.



SPUTUM CULTURE

The mucus you cough up may be tested for germs, including bacteria, fungus, and mycobacteria. For this test, you will be asked to cough up mucus and spit it into a special container. This is called a sputum culture. The sample will be sent to a laboratory to determine which germs will grow. This information can help your health care provider determine the best medication to use when treating your infection.

BLOOD TESTS

Blood tests may be ordered to determine why you have bronchiectasis. This may include immunodeficiency (problems with your immune system), inflammatory disease, and genetic testing. Knowing how you may have gotten bronchiectasis can help your health care team decide on your treatment plan.



TREATMENT FOR BRONCHIECTASIS

Although bronchiectasis cannot be cured, treatment can help you feel better and treat infections when present. Your treatment plan depends on the severity of your bronchiectasis symptoms as well as the cause of your bronchiectasis.

AIRWAY CLEARANCE

Airway clearance is an essential part of treatment for bronchiectasis. Almost all people with bronchiectasis should use some method of airway clearance every day. Airway clearance helps remove the mucus that is trapped in the airways. The goal is to loosen this mucus so you can cough it up more easily.

There are many ways to help clear the airways of mucus. These methods can be simple or more complex. Airway clearance should be chosen based on a person's preference, access to resources, and effectiveness. It is critical to find the method that works best for you. Not every person with bronchiectasis responds the same way to each technique.

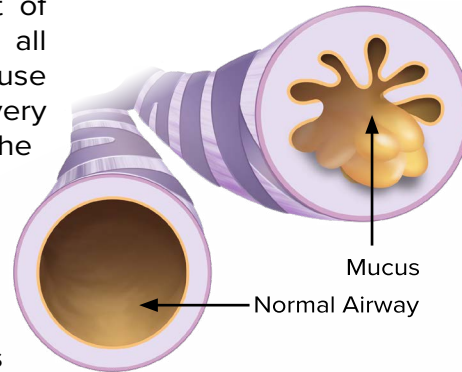
You may need to change your airway clearance routine during different seasons, when you have a flare-up (exacerbation), or for other personal health reasons. Your health care team can guide you in choosing the right airway clearance techniques for your diagnosis.

A typical airway clearance program uses therapy from one or more of the following categories:

- Manual techniques
- Devices
- Medications



You may find that exercising will help clear your airways. When you exercise, you tend to take larger, faster breaths. These larger breaths can help to remove mucus and can assist with keeping your tiny air sacs open.



MANUAL TECHNIQUES FOR AIRWAY CLEARANCE

Several different coughing and breathing exercises will help you move mucus and clear it out of your lungs. These methods can help make your coughing more effective. They can also make coughing less irritating to your throat and less tiring.

DIRECTED COUGH TECHNIQUES

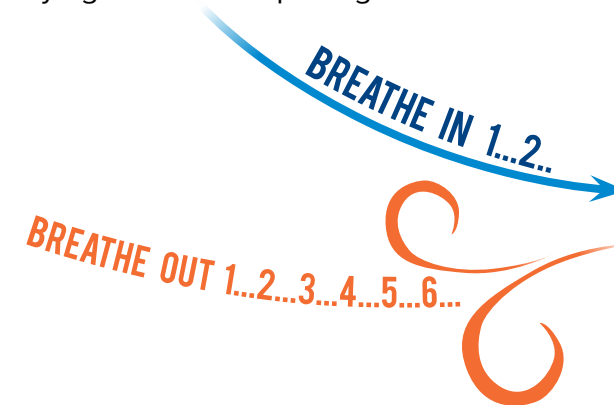
Directed cough is a way in which you can use specific types of coughs to clear mucus from the airways. Below are a few different directed coughing techniques that can be used by individuals with bronchiectasis.

DEEP COUGH

Here are the steps to performing a deep cough.

1. Sit upright and take a couple of normal breaths in through your nose and out through pursed lips. (Pictured below)
2. Take a deep breath in and hold it for 2-3 seconds.
3. Use your stomach muscles to help force the air out of your lungs in a deep cough. This can help move the mucus out of your lungs, allowing you to cough it out.

Remember to take several normal breaths before trying another deep cough.



HUFF COUGHING

Huff coughing is a type of coughing exercise that helps to move mucus from the lower airways to the upper airways. This happens through a series of quick, forced exhalations.

Here are the steps to performing huff coughing.

1. Start by taking a few deep breaths.
2. Take a large breath in and use your stomach muscles to breathe out in three short, rapid breaths while making a “ha, ha, ha” sound.
3. Squeeze your stomach muscles in as you exhale. Follow up with some deep breathing and perhaps a deep cough to help clear any mucus that you may have moved or “shaken loose.” Remember to pause and rest after each huff cough and each set of exercises.

SPLINTING

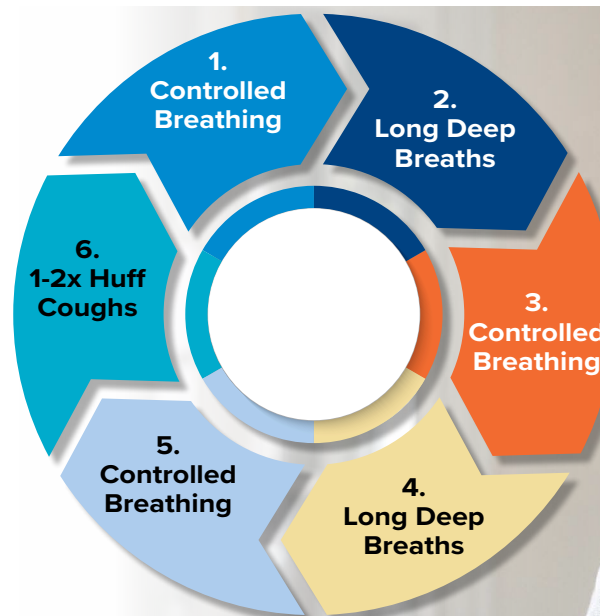
Sometimes, you may experience pain or soreness in your ribs or chest when coughing. Splinting is a method used for people who have had recent chest surgery, have broken ribs, or feel discomfort while coughing. By using this method, you may get a better cough. For this exercise, you will need a pillow or a large stuffed animal. Hold it up to your chest. As you cough, squeeze it with your arms close to your chest. This may help support your breathing effort and reduce pain.



Tell your physician if your pain continues or is bothersome.

ACTIVE CYCLE BREATHING TECHNIQUE

The active cycle breathing technique combines controlled normal breathing, deep breathing using the stomach muscles, large breath holds, and huff coughs.



To perform an active cycle breathing technique, follow these steps in order:

1. Perform controlled breathing by focusing on breathing in and out steadily for 20-30 seconds while relaxing your chest and shoulder muscles.
2. Take a large breath in while using your stomach muscles to draw the air into your lungs. Hold your breath for 3 seconds. Do this 3-4 times.
3. Do controlled breathing again—focusing on breathing in and out—for 20-30 seconds.
4. Take a large breath in while using the stomach muscles to draw the air into your lungs. Hold your breath for 3 seconds. Do this 3-4 times.
5. Do controlled breathing again—focusing on breathing in out steadily—for 20-30 seconds.
6. Do huff coughing (pg. 15).

POSTURAL DRAINAGE

Often, directed cough methods are used with inhaled medicines and with postural drainage therapy. Postural drainage uses gravity, deep breathing, and breath holds to drain the mucus from specific areas of the lung into the larger airways so that it can be coughed out. It is recommended to do postural drainage before meals to prevent stomach upset and digested food entering your airway. If you use inhaled medications, it is recommended to do postural draining after using your inhaler or nebulizer.

Your health care provider or respiratory therapist can instruct you on how to perform postural drainage at home. Often, they will show you which lobes of your lung should be targeted during therapy. ***Ask your health care provider to show you which position(s) may help you the most.***

To perform postural drainage, follow these steps:

1. Lie or sit with the area that you want to drain at the highest point. This may require you to switch positions if you have several areas of the lung that you would like to drain.
2. Stay in that position for 10-15 minutes while you take deep breaths. Use 2-3 second breath-hold every one to two minutes. Pillows, soft cushions, or bundled blankets may be used to help position your body. This may help your lung to drain better.
3. Once you have drained each portion of your lung for 10-15 minutes, or if you start to notice more congestion, use a directed cough method to help cough the mucus out of your lung.

CHEST PHYSICAL THERAPY

Manual chest physical therapy (CPT) uses postural drainage, percussion (patting on the back), and vibration of the chest to move mucus to the large airways. CPT sessions are usually done after using inhaled medications. These sessions usually last 20-30 minutes and can be physically demanding. Often, a caregiver will perform the CPT on you since it is difficult to perform on yourself. This method is not often used in the home setting, but it can be an effective way to remove mucus from the lungs.

AIRWAY CLEARANCE DEVICES

Positive Expiratory Pressure (PEP) therapy: Your health care provider may prescribe a handheld PEP device that causes vibrations inside your airways when you exhale against the device. These vibrations shake mucus loose so you can cough it out. Each treatment with this handheld device takes approximately 5-15 minutes. This therapy may be repeated several times a day, as needed. See the manufacturer's guidelines for specific instructions for use.

High Frequency Chest Wall Oscillation (HFCWO): In high frequency chest wall oscillation, you wear a vest or wrap that when using inflates around your chest. The vest expands and deflates rhythmically to gently and rapidly compress the chest wall. This fast, painless compressing and releasing help to vibrate the mucus out of the smaller airways and into the large airways where it can be coughed out. If you use inhaled medications, your health care provider may instruct you to use them before or during the HFCWO treatment.

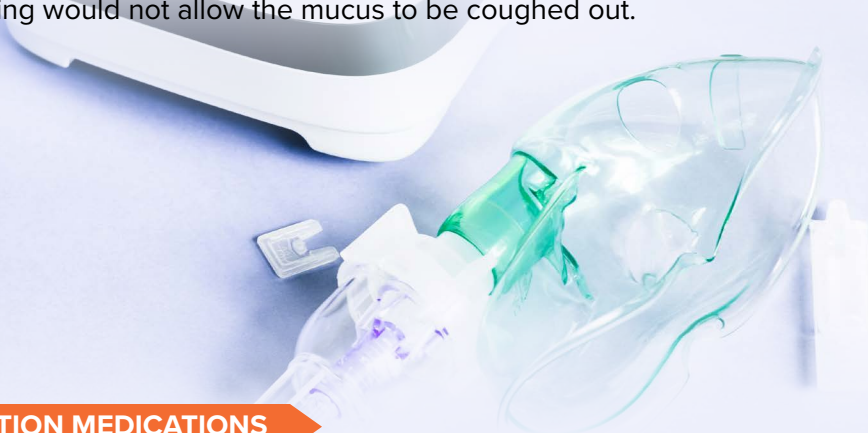


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MEDICATIONS FOR AIRWAY CLEARANCE

OVER-THE-COUNTER MEDICATIONS

Expectorant: This medication is taken by mouth and is used to loosen and thin mucus in the lungs. When buying an expectorant for clearing the lungs, do not purchase medication that contains both the expectorant and a cough suppressant containing dextromethorphan hydrobromide. The goal of airway clearance is to rid the lungs of excess mucus. Preventing a cough from occurring would not allow the mucus to be coughed out.



PRESCRIPTION MEDICATIONS

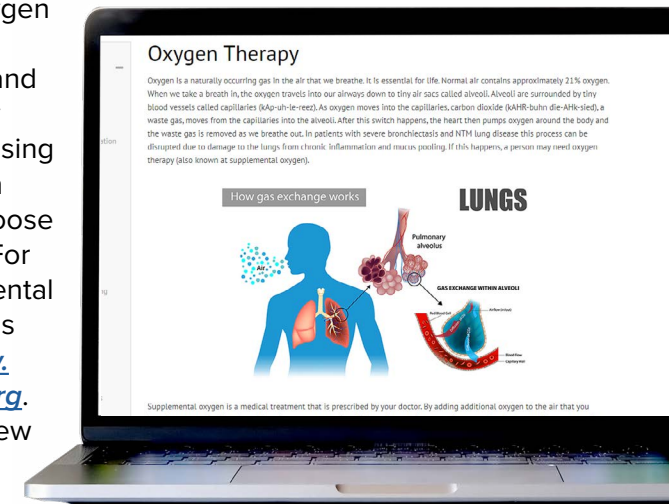
Inhaled Medications: Your health care provider may prescribe inhaled medications to help with your airway clearance. Hypertonic saline is a concentrated sterile salt solution that is inhaled through a nebulizer. It helps to thin the mucus in the lungs, so it is easier to cough up.

A nebulizer treatment (a machine that creates a fine mist that can be inhaled) with a bronchodilator might also be prescribed with airway clearance. Nebulizers are sometimes preferred over handheld inhalers because the aerosol adds moisture to the airway and some people may struggle with the use of their hands. This method of treatment also gives you more time to inhale the medication.

In some cases, antibiotics can be given with a nebulizer. This treatment can be used to help decrease the growth of bacteria in the lungs. Nebulizers deliver the antibiotic directly to the airways where it is needed. In some cases, this results in fewer side effects than when taking antibiotics in pill or liquid form. Although, inhaled medications may cause side effects such as increased cough, breathlessness, and hoarseness.

Oxygen: In some cases of bronchiectasis, supplemental oxygen may be required when blood oxygen levels are low. You will need a prescription from your health care provider if you need to use oxygen. Your prescription will tell you how much oxygen you need for different activities. It is very important that you use the amount of oxygen that your health care provider prescribed.

There are several types of oxygen systems for home use. These include tanks, concentrators, and liquid oxygen. There are many factors to consider when choosing an oxygen system. Your health care provider will help you choose a system that is right for you. For more information on supplemental oxygen, visit the Bronchiectasis and NTM 360 website at www.BronchiectasisandNTM360.org. You can also download and view our Oxygen Therapy guide at <http://copdf.co/guides>.



OTHER FORMS OF TREATMENT

Intravenous (IV) Antibiotics: Intravenous medications are given through a small tube in your arm, hand, or other areas of your body. IV antibiotics (medications that kill bacteria) are used in more severe situations, such as during an exacerbation that has not gotten better with oral antibiotics. IV antibiotics can also be used to treat certain bacteria that are resistant to oral antibiotics.

Surgery: Lung resection surgery may be helpful in some cases of bronchiectasis when only one area of the lung is affected. Surgery involves removing only part of the lung. This helps improve symptoms and decreases the frequency of flare-ups.



RECOGNIZING FLARE-UPS (EXACERBATIONS)

Sometimes your lung symptoms suddenly get worse. These flare-ups of your bronchiectasis are called exacerbations. They are often caused by an infection.



WARNING SIGNS OF AN EXACERBATION

- Change in color, thickness, odor, or amount of mucus
- Increased coughing
- Increased shortness of breath
- Increased tiredness that lasts more than one day
- Low-grade fever that doesn't go away
- Increased use of fast-acting or rescue medications
- If you use oxygen, you may find that you need more oxygen than usual.

Sometimes your symptoms may be a sign of a more serious condition or more severe flare-up.

Call 911 or your local emergency services if you are or have:

- Coughing up blood
- Blue color in lips or fingers
- New or increased ankle swelling
- Chest pain
- Confusion
- Severe shortness of breath

It's important to watch for early warning signs of an exacerbation and contact your health care provider right away when they occur. Delaying treatment may result in a more serious flare-up or longer recovery time and could worsen your condition. Your health care provider may prescribe antibiotics and increase how often you do airway clearance. Sometimes a more serious exacerbation needs to be treated in the hospital with IV antibiotics or other medications, including corticosteroids.

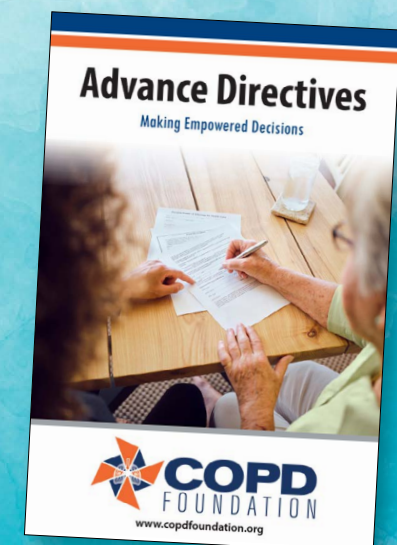
In addition to exacerbations, other factors such as sinus infections and gastroesophageal reflux disease (GERD) may make your bronchiectasis symptoms worse. It is important to call or visit your health care provider if you suspect that something is causing your symptoms to be worse.

MAKE A PLAN

Having a plan in place in the event of a flare-up can help ease the burden on you and your family.

- Talk to your health care provider about when to contact them to make changes to your treatments or airway clearance routine.
- Know the best way to contact your health care providers.
- Create an emergency action plan for your loved one or caregiver.
- Consider creating an advance directive (a document in which a person gives directions about their medical care before they are sick) so that in an emergency, loved ones are aware of wishes regarding your care.

For more information on this topic, download the Advance Directives guide on the COPD Foundation's website at <http://copdf.co/guides>.



LIVING WELL WITH BRONCHIECTASIS & REDUCING EXACERBATIONS

Living with a chronic (not curable) lung disease such as bronchiectasis can be challenging but is manageable. Performing airway clearance and taking your medications as directed can improve your symptoms. Making lifestyle changes can also help.

Here are some tips for living well with bronchiectasis and reducing your chance of an exacerbation:

Exercise:

Exercise can help clear mucus from the airways and improve quality of life. Your health care provider might encourage you to do some exercise each day, such as walking, bicycling, swimming, or yoga. Pulmonary rehabilitation, an exercise and education program for people with chronic lung disease, may also be an option.



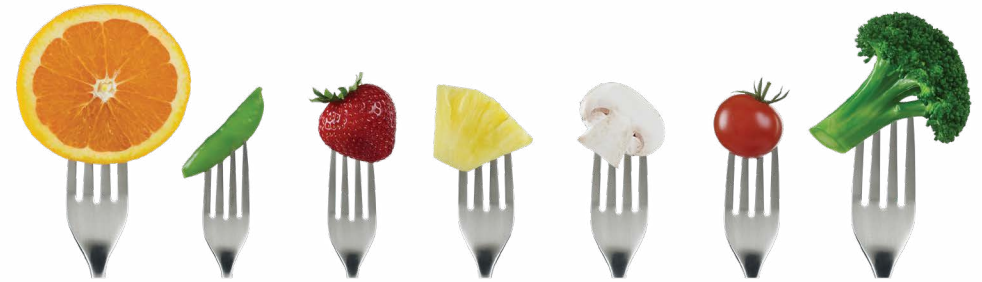
Do not smoke:

Smoking, vaping, exposure to secondhand smoke, and the use of other tobacco products can make your symptoms worse. If you use tobacco, talk with your health care provider about quitting. There are many tools to help you quit. You should also ask others not to smoke around you.



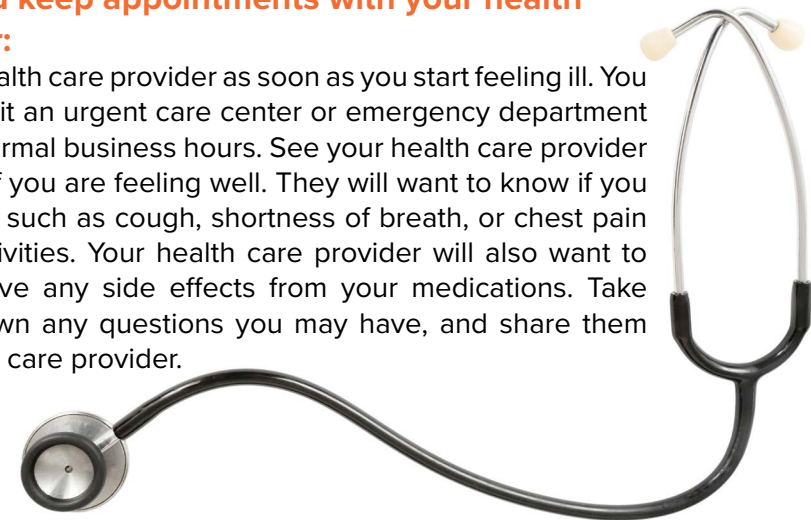
Eat to maintain a healthy weight:

Eat a well-balanced diet including lots of fruits and vegetables. If you are underweight, gaining weight can help increase your strength and help your body recover from flare-ups. If you are overweight, losing weight can help improve your breathing. Remember to stay hydrated as this will help with mucus clearance. Meeting with a nutritionist may assist you in maintaining a healthy weight.



Schedule and keep appointments with your health care provider:

Contact your health care provider as soon as you start feeling ill. You may need to visit an urgent care center or emergency department if it is outside normal business hours. See your health care provider regularly even if you are feeling well. They will want to know if you have symptoms such as cough, shortness of breath, or chest pain while doing activities. Your health care provider will also want to know if you have any side effects from your medications. Take notes, write down any questions you may have, and share them with your health care provider.



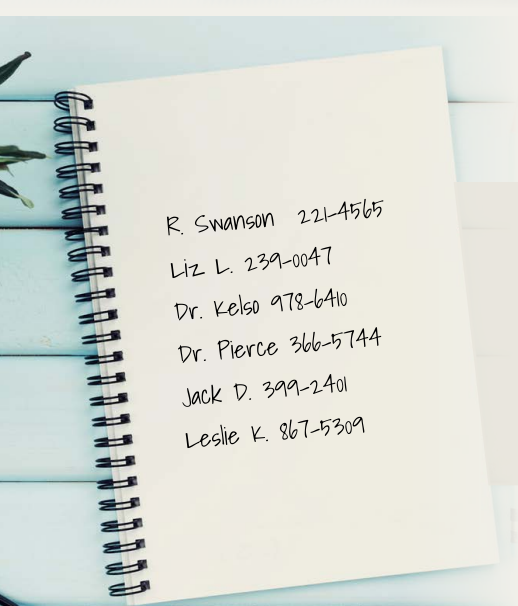
Take all your medicines as prescribed:

Keep a list of the medications you are taking and any medication allergies or other allergies you have. Keep this list in your wallet and take it with you whenever you go out.



Do your best to avoid illness:

Practice good handwashing and try to get plenty of rest. Get a flu vaccine each year and talk to your health care provider about other vaccines, such as the pneumonia and COVID-19 shots. Distance yourself from people who have coughs or colds, and consider wearing a mask when in large crowds.



R. Swanson 221-4565
Liz L. 239-0047
Dr. Kelso 978-6410
Dr. Pierce 366-5744
Jack D. 399-2401
Leslie K. 867-5309

Keep important numbers handy:

Make sure you have a list of important phone numbers (including your health care team, friends, family, and other contacts) who can help you in an emergency.

Learn all you can about your diagnosis:

Join a bronchiectasis support group or online community like BronchandNTM360social.

For more information on BronchandNTM360social visit www.BronchandNTM360social.org.



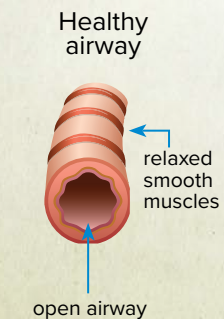
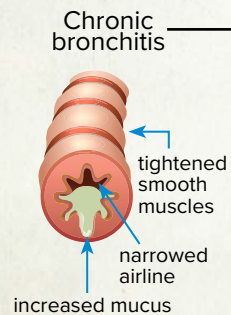
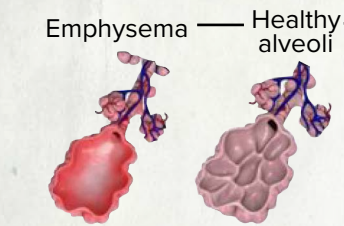
Talk about your feelings:

It can be helpful to share your feelings with someone who cares about you. Talk with a spouse, family member, or trusted friend. Consider seeing a mental health professional if your feelings are overwhelming or affect your daily activities.



BRONCHIECTASIS AND COPD OVERLAP

Chronic obstructive pulmonary disease (COPD) is a term that describes lung diseases such as emphysema and chronic bronchitis. Symptoms of COPD include shortness of breath, frequent coughing, wheezing, and tightness in the chest.

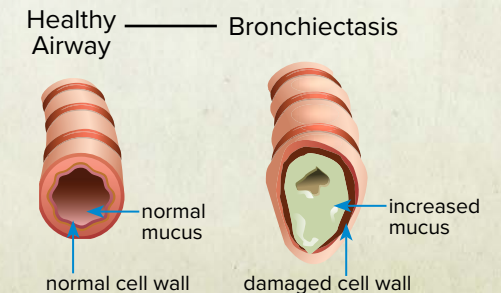


Bronchiectasis is not COPD. COPD and bronchiectasis both affect bronchial tubes and airway clearance techniques are helpful for both. Medications and other treatments used for COPD and bronchiectasis may otherwise be different.

Research suggests that there can be an overlap between COPD and bronchiectasis. A recent study showed that nearly half of those with bronchiectasis in the U.S. carry a diagnosis of COPD.³ Other research revealed that 8% to 30% of people with COPD have bronchiectasis.^{4,5} People with both lung conditions tend to have more flare-ups and hospitalizations than those who have only bronchiectasis.

If you have a cough that produces a lot of mucus and you have frequent lung infections, you should ask your health care provider to test you for bronchiectasis, COPD, or both.

To learn more about COPD, visit the COPD Foundation website at www.COPDFoundation.org.



NONTUBERCULOUS MYCOBACTERIAL LUNG DISEASE

Nontuberculous mycobacteria (NTM) are common germs found in soil and water in our environment. These germs can cause a rare, treatable lung condition called NTM lung disease. We come in contact with NTM germs every day. NTM germs can be breathed in through water in the form of steam and through small particles of soil in the air. These germs typically do not affect healthy lungs because a healthy lung can clear them. However, people with chronic lung conditions such as bronchiectasis and COPD are at greater risk for NTM lung disease.



The damage done to the lungs by other lung conditions makes them more likely to get infections such as NTM lung infections.

Common symptoms of NTM lung disease include:

- Cough (with or without mucus)
- Fatigue
- Shortness of breath
- Fever
- Weight loss
- Chest pain
- Bloody sputum



People who have NTM lung disease are prone to having chronic lung infections and pneumonia.

Treatment of NTM lung disease may include various medications like antibiotics. In addition, airway clearance, including expectorants and nebulized hypertonic saline, can be an important part of the treatment plan for those with NTM lung disease who have excess mucus. If you have NTM lung disease, it is recommended that you lessen your exposure to these germs through activities that include wearing a mask when exposed to soil, and avoiding saunas, hot tubs, and exposure to other sources of standing water.

MORE RESOURCES:

BronchandNTM360social

Join the conversation: Connect and communicate with other individuals affected by bronchiectasis and/or NTM lung disease by joining www.BronchandNTM360social.org.

Visit the World Bronchiectasis Day webpage

World Bronchiectasis Day is organized to raise awareness, share knowledge, and discuss ways to lessen the burden of bronchiectasis for those who have it. World Bronchiectasis Day is observed annually on July 1st. Each year, organizers from around the world coordinate activities to spread awareness in hopes of identifying the many people undiagnosed and living with bronchiectasis. Find out more by visiting the World Bronchiectasis Day webpage at www.WorldBronchiectasisDay.org.



Ask about the Bronchiectasis and NTM Research Registry

The Bronchiectasis and NTM Research Registry is a database of people with non-cystic fibrosis (non-CF) bronchiectasis and/or NTM lung disease from specialized centers across the United States. The goal of the Registry is to support research in the field of non-CF bronchiectasis and NTM lung disease. To find a center near you visit <https://copdf.co/BRR>.



About Bronchiectasis and NTM 360 of the COPD Foundation

Bronchiectasis and NTM 360 continues to expand offerings to the community. The 360 approach mobilizes partnerships across all stakeholder groups to increase disease awareness, community education and engagement, and focus on research that will ultimately lead to the development of therapeutics for bronchiectasis and NTM.

For more information visit www.BronchiectasisandNTM360.org.

About the COPD Foundation

The COPD Foundation is a patient-centered organization committed to preventing COPD, bronchiectasis, and NTM lung disease, and to seeking cures while improving lives and advocating for all affected.



Make a donation: You can support Bronchiectasis and NTM 360 by making a tax-deductible donation online at



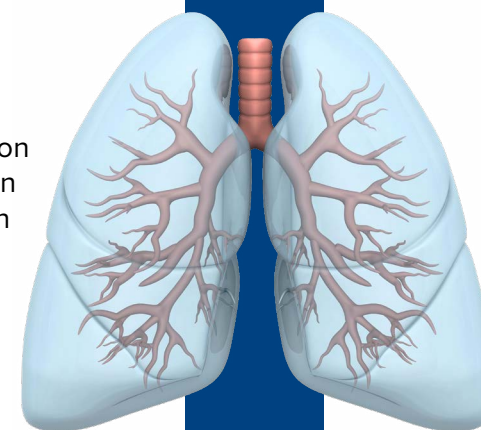
www.BronchiectasisandNTM360.org (click the “Donate Now” button).

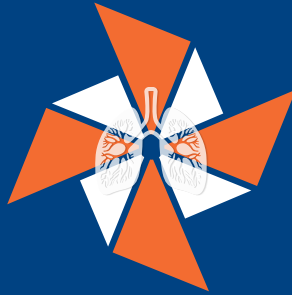
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Bronchiectasis and NTM 360
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Bronchiectasis and NTM Information Line:
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This guide has been reviewed by members of the
Bronchiectasis and NTM 360 Content Review and Evaluation Committee