

Understanding the lung condition bronchiectasis

Respiratory Medicine

Information for Patients

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What is bronchiectasis?

Bronchiectasis is a type of scarring of the lungs. One or more of the airways (bronchi) of the lungs widens. This causes a build up of excess mucus which is more likely to lead to infection in the lungs.

How the airways work

Air passes into the lungs through the windpipe (trachea). This divides into a series of branching airways (bronchi). Air passes from the airways into millions of tiny air sacs (alveoli). Oxygen from the air is passed into the bloodstream through the thin wall of the air sacs.

Tiny glands in the lining of the airways make a small amount of fluid called mucus. The mucus keeps the airways moist, but also traps any dust and dirt in the inhaled air. There are many tiny 'hairs' (cilia) on the surface of the airways. The millions of cilia lining the airways 'sweep' the mucus to the back of the throat to form sputum (phlegm) which is swallowed. Coughing also helps to clear the airways.

The airways in bronchiectasis

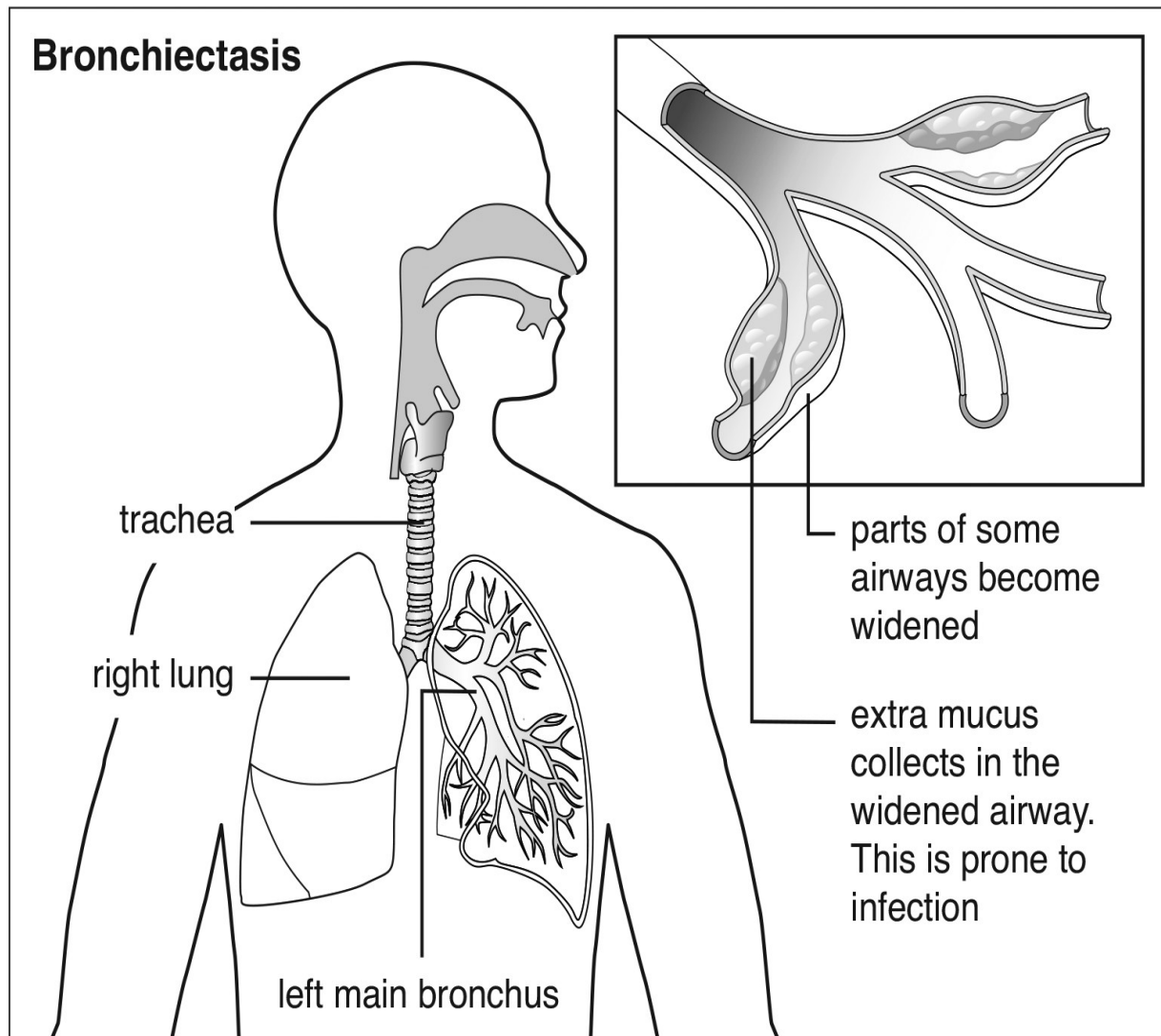
Bronchiectasis can vary greatly. There may be only one section of one airway that is widened and abnormal. If the condition is very bad many airways may be widened. Many affected people fall somewhere between these extremes. The widened parts of the airways are damaged and inflamed. This causes extra mucus to form which is less easily cleared.

These parts of the airways are also more 'floppy' and can collapse inwards. This may affect air flow through the affected airways. How bad the symptoms are depends on how many of

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the airways are affected, and how badly. The lung tissue next to a badly inflamed section of airway may also become inflamed and damaged.



What causes bronchiectasis?

The cause is often not clear. No cause can be found in around half of patients. Some conditions that affect or damage airways can cause bronchiectasis. Examples include the following:

- Severe lung infections such as tuberculosis (TB), whooping cough, pneumonia or measles. These can damage the airways at the time of infection. Ongoing bronchiectasis may then develop. This more is more likely to happen if the infection occurs early in life.
- Some inherited conditions: Primary ciliary dyskinesia is a condition that can be passed on. It affects the cilia so they do not 'beat' correctly to clear the mucus. Cystic fibrosis is another condition that affects the lungs and causes bronchiectasis.
- Problems with the immune system can lead to repeated lung infections, damage to the airways, and the development of bronchiectasis. These immune system problems may be passed on in families (inherited) or develop later in life.

- Some diseases that cause inflammation in other parts of the body for example: rheumatoid arthritis, ulcerative colitis. These can sometimes cause inflammation and damage in the airways and lead to bronchiectasis.
- Inhaled objects, such as peanuts, can become stuck and block an airway. This may lead to local damage to that airway.
- Acid from the stomach that is brought up and by breathing it in can damage airways.
- Inhaling poisonous gases may also cause damage.
- It should be stressed that we may never find a cause.

What are the symptoms of bronchiectasis?

- **Cough:** Coughing up lots of sputum is often the main symptom. The amount of sputum can vary, depending on the severity. It can be very tiring to cough up large amounts of sputum each day. Sputum can vary in colour from white/clear (mucoid), to yellow or green when it is infected.
- **Breathlessness:** Some people become breathless, particularly when exercising or exerting themselves.
- **Chest Infections:** You can often have a permanent infection in your lungs. This is because the airways do not clear the infection. Periods of increased infection and symptoms are called exacerbations.
- **Wheeze:** Wheezing is a whistling noise produced by unstable airflow in the airways particularly when breathing out. It can show there is a blockage. It is often found in people with bronchiectasis. It is often treated with medicines given through an inhaler.
- **Chest pain:** Chest pain may be caused by bronchiectasis, but it can also mean there is a new or further problem. You should always report chest pain to a member of the healthcare team, particularly if it is unusual for you.
- **Blood:** You may cough up some blood from an inflamed airway (a part of the body red or swollen usually as a result of an infection, injury, or illness). This is typically just small amounts of blood now and then. If it is unusual for you, or a large amount, you should report it to a member of the healthcare team.
- **Upper airway symptoms:** Some people with bronchiectasis also have constant (chronic) inflammation/infection in the nose or sinuses. This may cause an increase in mucus from the nose (catarrh) or pain over the sinuses.
- **Tiredness:** People with bronchiectasis often have a feeling of chronic fatigue or tiredness.

The severity of symptoms varies greatly. Some people have only mild symptoms and become used to a cough. They may sometimes have a chest infection, but a diagnosis of bronchiectasis is never made. At the other extreme, some people have severe symptoms with chest infections all the time. Most people with bronchiectasis fall somewhere in between these extremes.

How is bronchiectasis diagnosed?

The symptoms may show that you have bronchiectasis. A chest X-ray may show bronchiectasis, but that can be normal in mild disease. A chest CT scan is the best way to confirm bronchiectasis. A CT scan is a detailed X-ray test, which produces a detailed image of your lungs. Other tests may be advised if an underlying cause is suspected.

What are the treatments for bronchiectasis?

Your doctor may advise one or more of the following. The treatment may depend on how severe bronchiectasis is.

Antibiotics

Antibiotics are one of the main treatments. If you have mild bronchiectasis, you are likely to need a course of antibiotics every now and then to clear chest infections as and when they occur. If your sputum becomes green and you feel ill this can mean that you have a chest infection.

The choice of antibiotic will be decided by

- what bacteria are growing in your airways,
- any drug allergies or intolerances you have,
- and other medical conditions that you may have.

Patients often keep a -course of antibiotics at home, to start if they get an infection.

If you have more severe bronchiectasis, chest infections may return quickly once you stop taking antibiotics. In this case you may be told to take antibiotics regularly to reduce day to day symptoms, and help reduce the frequency and severity of infections. These long term antibiotics may be in tablet form, or given as a concentrated solution through a machine to help you breathe in medicine (a nebulizer).

In severe episodes of bronchiectasis antibiotics may be given by an injection (Intravenous injection/ IV). This may be done in hospital or at home.

Physiotherapy and other exercise therapies

The aim of physiotherapy and other exercise therapies is to help you to clear the mucus without too much coughing, and to help your lungs. This helps to prevent a build-up of infected mucus, which may prevent infections.

There are lots of different exercises that physiotherapists teach to help clear the mucus. Your physiotherapist will check your chest and decide on the best one. They will also advise you about the best times to take your medicine to clear your chest.

Regular exercise is also important to keep your general fitness and lung health. Your physiotherapist will help you to work out which exercises are the best for you.

Bronchodilators

People with bronchiectasis are often given drugs to help reduce wheeze and breathlessness. These are normally given by an inhaler, but sometimes nebulisers are used. It can be helpful to use these before sport or chest physiotherapy.

Immunisation

We recommend that you have vaccination against influenza ('flu jab'). This has to be repeated every year in the autumn, and you may have to ask your GP to call you for this. We also recommend that you receive the 'pneumonia' vaccination. This is sometimes done by us as part of our investigation in to the underlying cause of your bronchiectasis.

Do not smoke

Smoking makes symptoms worse. Smokers are strongly advised to try and give up. Help with this can be given by your GP or the bronchiectasis team. Also try and avoid passive smoking that is, breathing in the smoke from people smoking nearby.

Treatment of underlying conditions

When people with bronchiectasis have an underlying cause, other treatments may be advised, depending on the cause.

Surgery

Rarely an operation may be an option if you have a small local area of lung damage causing symptoms. Cutting out the damaged airway may cure the problem. Surgery is not normally recommended as it carries risk. After surgery patients may go on to develop bronchiectasis in other areas of the lung. Surgery may also be needed for more severe bleeding because of bronchiectasis.

Oxygen

Oxygen may be given for a few patients with severe bronchiectasis.

What is the outlook?

Most people with bronchiectasis have a good outlook. Symptoms in many affected people do not become severe. Taking antibiotics when you have an infection, or regularly when needed, keeps most people fairly well.

The condition becomes worse in some cases, and breathing problems may develop. In a small number of cases the condition becomes gradually worse over time as more and more of the airways become affected.

A life-threatening bleed from a damaged airway may also occur, but is rare. The outlook for people where bronchiectasis is part of another condition depends on the underlying cause.



What can you do to help?

- Understand your condition, and follow the self management plan.
- Make a plan with your GP and/or the bronchiectasis team for what to do if you have an exacerbation of your bronchiectasis.
- Try and do a sputum culture at least once a year. This is best done at the start of an exacerbation before you are taking antibiotics.
- Try to maintain your chest physiotherapy.
- Keep up to date with vaccinations.
- Keep fit and active.
- Do not smoke
- Try not to put on too much weight
- Know how and when you should contact the bronchiectasis team if you are struggling with your condition.

Questions:

If you have any questions write them down here to remind you what to ask.

Contact:

Bronchiectasis Nurses: 0116 256 3201 Monday to Friday 8.00am to 5pm

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