



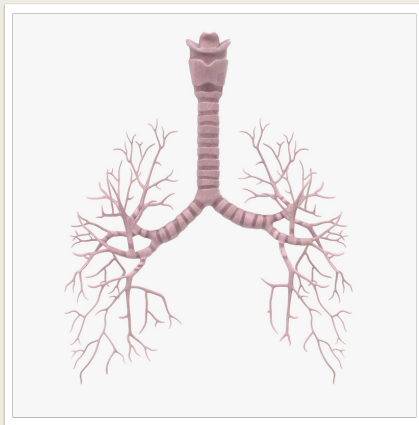
Medicine for Managers

Dr Paul Lambden BSc MB BS BDS FDSRCS MRCS LRCP DRCOG MHSM

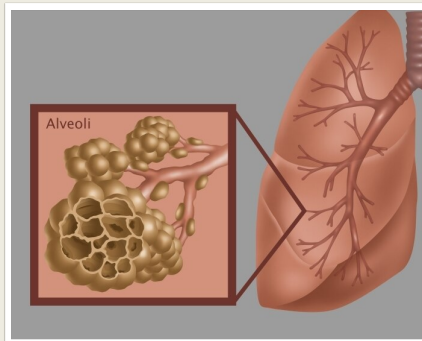
Bronchitis

Bronchitis is an inflammation of the bronchi which are the main air passages to the lungs. The bronchi are the branches of the main airway (trachea) which extends downwards from the larynx (voice box). The disease is normally accompanied by coughing up yellow or green, thick mucus and there may be a mild fever. The cough which accompanies bronchitis may persist for weeks or, if it is chronic, may be present to some degree all the time

The bronchi, illustrated here, form a network through the lungs and open into the alveoli, cup-shaped cavities, of which there are millions and where air exchange occurs, as below.



Bronchitis has been recognised since the time of the Ancient Greeks and early treatments were designed to assist coughing and loosen the mucus. It was first described in England in



about 1807 by Charles Badham and he recognised the infection associated with excess mucus production. It became associated with dampness, foggy conditions, industrial pollution and cold weather.

A century later, an article in the British Medical Journal suggested treatment with pure air, exercise and good simple food. Research in the 1950s identified industrial and smoking habits as causes and in 1962, it was defined as part of Chronic Obstructive Airways (now Pulmonary) Disease.

Bronchitis and Pneumonia

The two diseases can be distinguished by the sites affected. Bronchitis affects the bronchial tree whereas pneumonia affects the air sacs within the lungs themselves. Sometimes the two may occur together.

Acute and Chronic Bronchitis

Acute bronchitis is often caused by the same viruses that cause colds and other upper respiratory infections, usually starting as a runny nose or sinus symptoms and spreading to the airways where it produces a dry cough. In most

cases it resolves spontaneously after about a week. Chronic bronchitis, which may be a more serious condition, is a repeated irritation of the bronchi through infection, which results in copious mucus production, persistent cough and difficulty breathing because of narrowing by mucus of the airways. It is defined as a productive cough lasting more than three months, with recurring bouts for at least two consecutive years. It is most commonly associated with smoking.

Chronic bronchitis sufferers may have episodes when the symptoms worsen and the patient is in fact suffering **acute-on-chronic bronchitis**.

Symptoms of Bronchitis

Acute bronchitis is characterised by

- Cough
- Shortness of breath
- Wheeze
- Fever and feeling of malaise
- Disturbed sleep
- Sometimes chest tightness

Chronic bronchitis may have similar features to acute bronchitis but is not self-limiting. Features are:

- Chronic cough with mucus which may be blood-streaked
- Associated respiratory infections
- Fatigue and lethargy
- Headaches
- Wheezing
- Blue extremities. Normally oxygen levels in the blood are between 95 and 98%. If it falls below 85% because of difficulties with breathing, cyanosis develops. The blueness, most notably in nail-beds and lips, occurs because the blood oxygenation falls. This is a serious consequence and the patient will need more intensive therapy.

Patients whose symptoms last more than three weeks, have a fever of 38°C or above, cough up coloured or blood stained phlegm or experience breathlessness or wheezing, should consult their GP.

In the UK, the most common cause of chronic bronchitis is **cigarette smoking**. People who live with smokers are also at greater risk. Other factors are:

- Low resistance as a result of intercurrent illness, such as a cold, other infection or condition that compromises the immune system.
- Pollution and inhaled irritants, both generally from factory chimneys, etc. and from industrial environments where lungs may be irritated by chemical fumes, grains, textiles or chlorine.
- Gastric Reflux with heartburn can irritate the throat and increase susceptibility to bronchitis.

Diagnosis of Bronchitis

Acute bronchitis may be difficult to distinguish from a cold but, for the doctor, confronted by an unwell patient perhaps with a cough, temperature, sputum and feeling unwell, diagnosis is important and will normally include:

- History. Duration and nature of symptoms, frequency and recurrence.
- Physical examination. This will include a full examination of the respiratory tract including applying a stethoscope to the chest to hear the breath sounds.
- Sputum test to assess whether there is any bacterial infection which might be treated with antibiotic.
- Pulmonary Function Tests which involve using a device which measures airflow into and out of the lungs. Such tests

may be used for the diagnosis of asthma or emphysema.

- Chest X-ray to identify any pneumonia changes or other causes of cough
- Pulse oximetry to measure blood oxygen levels.

Further tests may involve more comprehensive blood tests, CT scan and, during the recovery phase, exercise testing.

Treatment of Acute Bronchitis.

In general, particularly in healthy individuals, acute bronchitis recovers without any specific treatment, normally within seven to ten days.

Antibiotics are generally valueless for acute bronchitis because the usual causes are viral. In some cases, if there is associated wheeze, a bronchodilator inhaler may be prescribed to open the airway and decongestants may be helpful to loosen mucus, although there is some doubt about their efficacy.

Treatment of Chronic Bronchitis

Unfortunately there is no cure for chronic bronchitis and treatment is aimed at relieving the symptoms, preventing the development of complications and slowing down the progression of the disease.

- STOP SMOKING.
- Bronchodilator inhalers dilate (open) the airways and improve the airflow to reduce any breathlessness or wheezing.
- Antibiotics may be required to fight infections associated with the bronchitis or any other infections which may be present.
- Steroids may be used during acute exacerbations of the infection with more severe wheezing where the other treatments are not effective.

- Oxygen may be required in more severe cases.
- During the attacks, other self-care measures may be useful, such as a humidifier to moisten the air, which may help coughs and loosen mucus.

Measures to Prevent Bronchitis or its exacerbations

- Good hand-washing to minimise transmission of viruses, identified as so important since Covid appeared, reduces the risk of respiratory infection
- Influenza vaccines are essential. 'Flu is a major cause of bronchitis, may reduce the risk of acute bronchitis and reduce the severity of illness with chronic bronchitis.
- Avoid cold, damp, smoky or polluted environments.

Historical Note:

*Bronchitis is now part of a group of respiratory conditions called Chronic Obstructive Pulmonary Disease. In older textbooks, readers may come across the terms **Blue Bloaters** and **Pink Puffers**.*

These were descriptions of patients for whom treatment was often ineffective at controlling symptoms and were based on appearance.

***Blue Bloaters** referred to patients who were blue, with breathlessness and chronic cough. They had bluish skin, particularly on the lips and fingertips, due to low oxygenation. They were*

overweight with swollen legs, feet and ankles, and prominent neck veins, features of heart failure resulting from the heart trying to pump blood through diseased lungs.

***Pink Puffers** were patients who were thin, breathing rapidly and appeared pink. They breathed through pursed lips, adopted to slow down breathing out. Unlike blue bloaters, they compensated for poor oxygenation by breathing more quickly. The chest often became barrel-shaped, partly because air could get in but the obstructive nature of the chronic bronchitis prevented some of it getting out.*

The terms have been abandoned because science has improved and disorders are more accurately diagnosed and named.

However, they also became obsolete because the terms were really quite unpleasant and throwbacks to the olden days when physicians described what they saw without any consideration for the sensitivities of the sufferers.

My textbooks of the 1970s still used the terms but I always felt uncomfortable using them.

I am glad they have gone!

paullambden@compuserve.com