

Chronic bronchitis and emphysema

Chronic bronchitis and emphysema stop the lungs from working properly, typically causing breathlessness and wheezing. The two conditions lead to similar symptoms are often referred to as “chronic obstructive pulmonary disease”, or COPD for short.

The biggest single cause of COPD is smoking, and the risk increases with the number of cigarettes smoked *. As smoking habits have changed over the last 20 years the death rate seems to have declined steadily in men but has increased in women.

Due to industrial smoke and pollutants, it is also more common in people living in cities than in the country, and in people who work in dusty environments. Generally, it is more likely to affect older people and the vast majority of sufferers are aged 70 to 85.

What is chronic bronchitis?

Bronchitis means inflammation of the bronchi -the main airways that lead from the trachea (windpipe) into your lungs. This inflammation may be caused by irritants, such as tobacco smoke or by infection.

When an episode of bronchitis clears up once the infection responsible has cleared, the condition is termed acute bronchitis. The chronic form of bronchitis develops only after prolonged exposure to irritants, causing abnormalities to develop in the bronchial lining. The chronic inflammation causes excessive amounts of mucus - otherwise known as phlegm or sputum - to be produced by the bronchi. This mucus then blocks the airways and air sacs - alveoli - reducing the amount of oxygen available to the lungs, causing breathlessness. The condition is often made worse by infections such as colds and flu.

Chronic bronchitis is an unpleasant and ongoing condition and a slow deterioration is likely.

Emphysema

Emphysema is a form of lung disease related to bronchitis. Like chronic bronchitis, it generally occurs as a result smoking, which damages the elastic supporting structure within the lungs. This leads to breakdown and collapse of some of the airways which causes air to become trapped and the lungs over-inflated. Long term heavy smokers may well get emphysema and bronchitis together.

There is one rare inherited form of emphysema - called homozygotic alpha-one antitrypsin deficiency - where the condition occurs by middle age, even without exposure to the usual irritants (such as cigarette smoke). This is due to the deficiency of a protein - found in the serum part of blood - which acts to protect the lungs.

Diagnosis

The symptoms of COPD will usually come on in the winter, and are often worse in the mornings.

The GP will take a history of symptoms and perform a physical examination. He or she will probably listen to the chest with a stethoscope, listening for noises such as wheezing or crackles and perform a lung function test. This involves blowing into a device that measures how much and how fast air can be expelled from the lungs. Different lung problems produce different patterns of breathing capability and help to differentiate chronic bronchitis from, other breathing-related conditions such as asthma.

The GP may refer patients suspected of having COPD to hospital for more detailed lung function tests and possibly a chest X-ray. In people are very unwell as a result of their breathing difficulties, the levels of oxygen and carbon dioxide in the bloodstream may be measured.

This involves taking a blood sample from an artery - usually at the wrist. Alternatively, a pulse oximeter is a monitoring device that measures the oxygen concentration in the bloodstream without the need for needles. It simply requires a small clip device to be placed around one of your fingers.

More specialised tests - such as CT (computed tomography) and MRI (magnetic resonance imaging) scans - may also be carried out to clarify the extent of any disease and exclude any other lung problems, such as cancer.

Treatment

There is no cure for COPD and any damage to the lungs is irreversible. The most important step is to stop smoking. It will also help to avoid dusty and smoky environments. This will slow down the progression of the disease.

Prompt treatment of any bacterial infection with antibiotics is important - this should ease the symptoms, and may help slow the deterioration of the disease.

There are also a couple of practical steps that can help:

- sleep in a warm bedroom - this may reduce night-time coughing
- try inhalations of steam - this may make it easier to cough up the sputum

Cough suppressant medicines are not generally recommended.

Drug treatments

Asthma treatments

Sometimes people may have asthma in addition to chronic obstructive pulmonary disease and asthma treatments, such as an inhaler (puffer) may help alleviate some of the symptoms of wheezing and breathlessness.

A bronchodilator drug such as salbutamol (Ventolin) or ipratropium bromide (Atrovent), usually taken via an inhaler or a nebuliser, to relieve the constriction of the airways.

Steroids

Steroid medication - either by inhaler or in tablet (oral) form - has been found to improve the short-term symptoms of chronic bronchitis, though not to improve the long-term outlook, or slow down the progression of the disease. Long term oral steroid treatment also carries the risk of side effects, such as osteoporosis and diabetes.

Oxygen therapy

People with severe COPD that results in low levels of oxygen in the blood may need long-term oxygen therapy to help relieve their symptoms. Oxygen is inhaled in via a mask or nasal cannula (small tube). The oxygen is provided in large tanks for home use, or smaller, portable versions for outside the home. An oxygen concentrator - a machine that uses air to produce a supply of more oxygen-rich gas - is an alternative to tanks.

Flu jabs

People who have COPD should certainly have a flu immunisation each year as they are particularly vulnerable to complications. Also, think about getting a jab against pneumonia - this injection protects against the pneumococcus bacterium, and lasts up to ten years.

**Doll R, Peto R, Wheatley K, Gray R. Sutherland I. Mortality in relation to smoking: 40 years observation on male British doctors. BMJ 1994; 309: 901-10*

Further information

British Lung Foundation
<http://www.lunguk.org/info/copd.html>

British Thoracic Society
<http://www.brit-thoracic.org.uk>

American Lung Foundation
<http://www.lungusa.org>

Healthwise (Health Information Resource Centre)

Tel : (852) 2849 2400
Fax : (852) 2849 2900
Email : info@healthwise.org.hk
Homepage : www.healthwise.org.hk

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