

## Chronic obstructive pulmonary disease (COPD)

### Overview

Chronic obstructive pulmonary disease (COPD) is a chronic lung disease, usually caused by damage from cigarette smoking or exposure to smoke. There are two main forms:

- **Chronic bronchitis.** Here, the lining of the bronchi — the tubes that bring air into your lungs — are thickened and full of mucus. This causes a chronic productive cough (a 'wet' cough with mucus) and makes it hard to breathe.
- **Emphysema.** With emphysema, the sacs at the end of the bronchi are damaged and stiff. The sacs, which normally allow oxygen and carbon dioxide to pass from the bronchi to the blood stream, can't work properly. This causes shortness of breath.

There is no cure and the damage cannot be undone, but treatment can reduce symptoms and stopping smoking prevents further damage to the lungs. Severe disease can be fatal.

### Causes

Smoking damages the lungs and causes COPD. Most people with COPD are smokers or former smokers. There are other causes, however. These include:

- Second-hand smoke.
- Air pollution.
- Occupational exposure to dust and fumes.
- Being born with an insufficient amount of the enzyme alpha-1-antitrypsin. This important enzyme normally helps protect the lung from damage by things like pollution.

### Symptoms

The symptoms of COPD can include:

- A chronic cough.
- Increased mucus, which may be especially noticeable in the morning.
- Shortness of breath, especially when you exert yourself.
- Wheezing.
- A feeling of tightness or constriction in the chest.
- Unexplained weight loss
- Blue lips or blue fingertips.

If you have symptoms like these, your doctor will examine you (for example, by looking at your hands and listening to your chest) and may order:

- A chest X-ray.

- Lung function tests, such as spirometry. These involve breathing into special machines that measure how well your lungs are working.
- Blood tests to measure the amount of oxygen and carbon dioxide in your bloodstream.

You may be referred to a respiratory physician (a doctor who specialises in lung diseases) if there is any doubt about the diagnosis or if your symptoms are severe or not responding to treatment.

### Treatment

The most important thing to do is to stop smoking. There are a number of ways your doctor can help you quit smoking. One of the most effective is nicotine replacement therapy such as patches, chewing gum, or an inhaler to stop cravings. A good source of information and support when you are quitting is the Quitline: 131 848.

The standard way to manage COPD is to use the COPDX approach:

- **C**—Confirm the diagnosis and assess the severity. Your doctor will do this.
- **O**—Optimise function. This may involve medications and physical and other therapies to improve the condition of the lungs.
- **P**—Prevent deterioration. Primarily, this involves stopping smoking and being vaccinated against germs that cause chest infections.
- **D**—Develop a support network and self-management plan.
- **X**—Manage exacerbations, or sudden deteriorations in the condition.

Using these principles, your doctor may develop a COPD management plan which is personalised for you.

### Pharmacological

The symptoms of COPD can often be reduced with inhaled medications, which are breathed into the lungs through a puffer, inhaler, or nebuliser.

The most commonly prescribed medication is tiotropium (Spiriva). This is used once a day to help open the bronchi by relaxing the muscles in the walls of the bronchi.

Salbutamol (trade name Ventolin) is another medication that relaxes the muscles in the walls of the bronchi. There are short-acting forms to relieve symptoms

and long-acting forms to prevent symptoms.

Steroids are medications that reduce inflammation in the walls of the bronchi. These may be recommended if you have moderate to severe symptoms and frequently become unwell.

It is very important to use inhalers properly. Your doctor or practice nurse will show you how to do this, but it is a good idea to have refresher sessions every year.

An exacerbation of COPD occurs when symptoms suddenly get worse, often because of an infection. The symptoms of an exacerbation include worsening shortness of breath, more coughing, more mucus, or a change in the colour of your mucus.

The treatment of an exacerbation may involve:

- **Antibiotics.**
- **Medications** to open up the bronchi, such as more frequent doses of salbutamol.
- **Steroids**, which may be inhaled or swallowed.
- **Medications** to thin the mucus and make it easier to cough mucus up.

Your COPD management plan will tell you when you should take these medications.

To reduce your risk of getting lung infections, you should get a flu shot each year and be vaccinated against *Streptococcus pneumoniae*, a bacterium that causes pneumonia.

People with severe COPD may need an oxygen tank to breathe from.

### Complementary medicines and supplements

No complementary medicines have been shown to improve the symptoms or the outlook for people with COPD. However, meditative techniques such as yoga may help reduce the panic many people feel when they are short of breath.

### Physical and mental health therapy

Your doctor will refer you to a pulmonary rehabilitation program, if one is available in your area. Here, a multidisciplinary team of physiotherapists, nurses, dieticians, and psychologists will help you understand and manage your condition. Exercise is an essential part of the treatment as it improves lung function.

### **Surgical**

In some cases, specialists recommend surgery to remove some of the damaged lung. A lung transplant may be an option for some people.

### **Lifestyle and diet**

It is very important for people with COPD to have a healthy diet. For example, being short of breath can cause you to use up a lot of kilojoules, so you may need a diet with extra energy and nutrients. A dietician can give you personalised advice.

People who are overweight may need to lose weight.

Quitting smoking is the single most important things people with COPD can do to help themselves. Continuing to smoke will cause more damage and worse symptoms.

COPD is a serious and often debilitating condition. It is important to have a network of family, friends, carers, and healthcare professionals to help you.

### **Hospital care**

People with COPD have damaged lungs and are very susceptible to infections and often unable to cope with infections well. As a result, they may need to go to hospital when they become unwell. Your COPD management plan will tell you when it is best to go to the emergency department.

It is important for hospital staff to know what you want them to do if your illness becomes life-threatening. Writing advance care directives is one way of making sure all the healthcare professionals involved in your treatment know what you want them to do.

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