

# COPD (Chronic Obstructive Pulmonary Disease)

Smoking usually causes COPD. Symptoms include cough and breathlessness. Stopping smoking is the most important treatment. Inhalers are commonly used to ease symptoms. Other treatments such as steroids, antibiotics, oxygen, and mucolytic medicines are sometimes prescribed in severe cases, or during a flare-up (exacerbation) of symptoms.

## What is COPD?

COPD (Chronic Obstructive Pulmonary Disease) is a general term, which includes the conditions **chronic bronchitis** and **emphysema**.

- Chronic means persistent.
- Bronchitis is inflammation of the bronchi (the airways of the lungs).
- Emphysema is damage to the smaller airways and air sacs (alveoli) of the lungs.
- Pulmonary means 'affecting the lungs'.

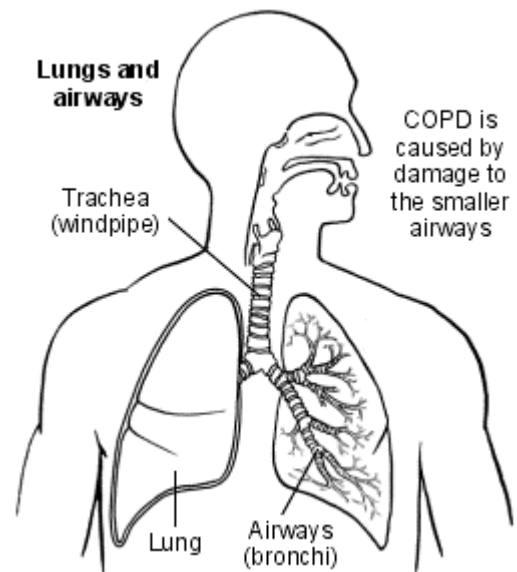
Chronic bronchitis or emphysema can cause obstruction (narrowing) of the airways. Chronic bronchitis and emphysema commonly occur together. The term COPD is used to describe airways, which are narrowed due to chronic bronchitis, emphysema, or both.

## How common is COPD?

COPD is common in the UK. It usually affects people over the age of 40. It accounts for more time off work than any other illness. A flare-up (exacerbation) of COPD is one of the commonest reasons for admission to hospital.

## What causes COPD?

**Smoking** is the cause in the vast majority of cases. There is no doubt about this. The lining of the



airways becomes inflamed and damaged by smoking. About 3 in 20 one-pack-per-day smokers, and 1 in 4 two-pack-per-day smokers develop COPD if they continue to smoke. Air pollution and polluted work conditions may play a part, or make the disease worse. However, people who have never smoked rarely develop COPD.

### What are the symptoms of COPD?

- **Cough** is usually the first symptom to develop. It is productive with phlegm (sputum). It tends to come and go at first, and then gradually becomes more persistent (chronic). You may think of your cough as a 'smokers cough' in the early stages of the disease. It is when the breathlessness begins that people often become concerned.
- **Breathlessness ('short of breath') and wheeze** may occur only when you exert yourself at first (for example, when you climb stairs). These symptoms tend to become gradually worse over the years if you continue to smoke. Difficulty with breathing may eventually become quite distressing.
- **Sputum.** The damaged airways make a lot more mucus than normal. This forms sputum (phlegm). You tend to cough up a lot of sputum each day.
- **Chest infections** are more common if you have COPD. Wheezing with cough and breathlessness may become worse than usual if you have a chest infection. Sputum usually turns yellow or green during a chest infection.

### What's the difference between COPD and asthma?

Asthma and COPD cause similar symptoms. However, they are different diseases. Very briefly:

- In COPD there is permanent damage to the airways. The narrowed airways are 'fixed', and so symptoms are chronic (persistent). Treatment to 'open up the airways' is limited.
- In asthma there is inflammation in the airways, which causes muscles in the airways to constrict. This causes the airways to narrow. The symptoms tend to 'come and go', and vary in severity from time to time. Treatment to reduce inflammation and to 'open up the airways' usually works well.

Both asthma and COPD are common, and some people have both conditions.

### Do I need any tests?

Spirometry is often done to confirm the diagnosis. This test measures how much air you blow into a machine. (A value is calculated of the amount of air you can blow out in one second divided by the total amount of air you blow out.) A low value indicates that you have narrowed airways. To rule out asthma, the test may be repeated after you take an inhaler, which 'opens up the airways'. An improvement in the result after taking the inhaler indicates that asthma is causing some or all of the symptoms. COPD is likely if there is little or no improvement after taking the inhaler.

### What is the progression and outlook of COPD?

Symptoms usually begin in people aged over 40 who have smoked for 20 years or more. A 'smokers cough' tends to develop at first. Once symptoms start, if you continue to smoke, there is usually a gradual decline over several years to increasing breathlessness. Chest infections tend to become more frequent as time goes by. A flare-up of symptoms (exacerbation) occurs from time to time, typically during a chest infection.

As the disease becomes more severe, not enough oxygen may get into the lungs through the narrowed airways. A reduced amount of oxygen then passes into the bloodstream. This can cause heart failure, as the heart needs a good oxygen supply.

At least 25,000 people die each year in the UK from the end stages of COPD. Many of these people have several years of ill health and poor quality of life before they die. Chronic ill health and death due to COPD is preventable in most cases (see below).

## How can the course of the COPD be altered?

**Stop smoking.** This cannot be stressed enough. If you stop smoking at an early stage of the disease, it will make a huge difference. Any damage already done to your airways cannot be reversed, but stopping smoking prevents the disease from getting much worse. It is never too late to stop at any stage of the disease. Even if you have fairly advanced COPD, you are likely to benefit and prevent further progression of the disease.

Cough may become worse for a while when you give up smoking. This often happens as the lining of the airways 'come back to life'. Resist the temptation to start smoking again to ease the cough. An increase in cough after you stop smoking usually settles in a few weeks.

See a practice nurse or doctor if you have difficulty in stopping smoking. Help is available. For example, counseling, nicotine replacement therapy (nicotine gum etc), and another medicine to help with stopping smoking may help. Another leaflet discusses giving up smoking in more detail.

## What are the treatments for COPD?

### Stop smoking

This is the most important treatment.

### Bronchodilator inhalers

An inhaler with a bronchodilator medicine is often prescribed. They work by relaxing the muscles in the airways to open up them up as wide as possible. They include:

- **Beta agonist** inhalers such as salbutamol and terbutaline.
- **Anticholinergic** inhalers such as ipratropium.

Inhalers work well for some people, but not so well in others. Some people with mild or intermittent symptoms only need an inhaler 'as required' for when breathlessness or wheeze occur. Some people need to use inhalers regularly. The different types of inhalers work in different ways. A combination of two different inhalers may help some people.

### Bronchodilator tablets

These contain medicines that 'open the airways'. Side effects are quite common and inhalers are usually better. However, some people find inhalers difficult to use, and tablets are an alternative.

### Steroid inhaler

Some people with COPD are prescribed a steroid inhaler in addition to a bronchodilator inhaler. Steroids reduce inflammation. There are several brands of steroid inhaler. People with COPD who also have some asthma benefit most from a steroid inhaler.

If you do not have any 'asthma tendency', the role of steroid inhalers is controversial. Some studies suggest that they may help. For example, one large study showed that there was a slower decline in health, and fewer flare-ups of symptoms in people with moderate or severe COPD who took a regular steroid inhaler.

### Steroid tablets

A short course of steroid tablets is sometimes prescribed if you have a bad flare-up of wheeze and breathlessness (often during a chest infection). They help by reducing the extra inflammation in the airways caused by infections. Taking steroid tablets long term is not advised due to the serious side effects, which can develop.

### **Mucolytic medicines**

A mucolytic medicine makes the sputum less thick and easier to cough up. This may also have a knock-on effect of making it less easy for bacteria (bugs) to infect the mucus and cause chest infections. The number of flare-ups of symptoms (exacerbations) tends to be less in people who take a mucolytic. It needs to be taken regularly, and is most likely to help if you have moderate or severe COPD and have frequent or bad flare-ups.

### **Antibiotics**

A short course is often prescribed if you have a chest infection.

### **Oxygen**

This may help some people with severe symptoms. It does not help in all cases. A specialist usually does some breathing tests to assess whether oxygen will help. If found to help, oxygen needs to be taken for at least 15 hours a day to be of benefit.

### **Surgery**

This is an option in a very small number of cases. For example, removing a section of lung that has become useless may improve symptoms. Lung transplantation is being studied, but is not a realistic option in most cases.

## **What can I do to help?**

- **Get immunized.** Two immunizations are advised.
  - A yearly 'flu jab' each autumn protects against possible chest damage from influenza.
  - Immunization against pneumococcus (a bug that can cause serious chest infections).  
This is a 'one off' injection and not yearly like the 'flu jab'.
- **Keep fit.** Studies have shown that people with COPD who exercise regularly tend to improve their breathing, ease symptoms, and have a better quality of life. Any regular exercise is good. A daily walk is a good start if you are not used to exercise.
- **Lose weight** if you are overweight. Carrying extra weight can make breathlessness worse.

### **In summary**

- Smoking usually causes COPD.
- Symptoms usually become worse if you continue to smoke.
- Symptoms are unlikely to get much worse if you stop smoking.
- Treatment with inhalers often eases symptoms, but no treatment can reverse the damage to the airways.
- A flare-up of symptoms, often during a chest infection, may be helped by a short course of steroid tablets and/or antibiotics.