

# Chronic Obstructive Pulmonary Disease

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Chronic obstructive pulmonary disease (COPD) is an umbrella term for people with **chronic bronchitis**, **emphysema**, or both. With COPD the airflow to the lungs is restricted (obstructed). **COPD is usually caused by smoking**. Symptoms include cough and breathlessness. The most important treatment is to stop smoking. Inhalers are commonly used to ease symptoms. Other treatments such as steroids, antibiotics, oxygen, and mucolytic (mucus-thinning) medicines are sometimes prescribed in more severe cases, or during a flare-up (exacerbation) of symptoms.

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## What is chronic obstructive pulmonary disease?

Chronic obstructive pulmonary disease (COPD) is a general term which includes the conditions **chronic bronchitis** and **emphysema**. COPD is the preferred term, but you may still hear it called chronic obstructive airways disease (COAD).

- 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 airflow obstruction due to chronic bronchitis, emphysema, or both.**

## How common is chronic obstructive pulmonary disease?

COPD is common. About three million people in the UK have COPD. It is estimated that another half million people have the condition but have not been diagnosed with COPD. COPD mainly affects people over the age of 40 and becomes more common with increasing age. The average age of diagnosis is around 67 years. It is more common in men than women.

COPD accounts for more time off work than any other illness. A flare-up (exacerbation) of COPD is one of the most common reasons for admission to hospital (1 in 8 admissions is due to COPD).

## What causes chronic obstructive pulmonary disease?

**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 people who smoke one packet of cigarettes (20 cigarettes) per day, and 1 in 4 40-per-day smokers, develop COPD if they continue to smoke. For *all* smokers, the chances of developing COPD is between 1 in 10 and 1 in 4.

Air pollution and polluted work conditions may cause some cases of COPD, or make the disease worse. The combination effect of occupational exposure to air pollutants *and* smoking increases the chances of developing COPD.

A small number of people have a genetic (hereditary) risk of COPD due to very rare protein deficiencies that can lead to lung, liver and blood disorders. (The condition is called alpha-1-antitrypsin deficiency). Less than 1 in 100 cases of COPD are due to this.

However, people who have never smoked *rarely* develop COPD. (Passive smoking remains, however, a *potential* cause.)

## What are the symptoms of chronic obstructive pulmonary disease?

- **Cough** is usually the first symptom to develop. It is productive with sputum (phlegm). 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 (shortness 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. A sudden worsening of symptoms (such as when you have an infection) is called an exacerbation. Wheezing with cough and breathlessness may become worse than usual if you have a chest infection and you may cough more sputum. Sputum usually turns yellow or green during a chest infection. Chest infections can be caused by bacteria *or* viruses. Bacteria (which can be killed using antibiotics) cause about 1 in 2 or 3 exacerbations of COPD. Viruses (not killed with antibiotics) are a common cause of exacerbations too, particularly in the winter months. The common cold virus may be responsible for up to 1 in 3 exacerbations.
- Other symptoms of COPD can be more vague. Examples are weight loss, tiredness and ankle swelling.

**Chest pain and coughing up blood (haemoptysis) are not common features of COPD.** It is possible to have slightly blood-streaked sputum when you have a chest infection. However, chest pain, blood in the sputum or coughing up just blood, should always be reported to a doctor. This is because other conditions need to be excluded (like angina, heart attack or lung cancer).

## What's the difference between chronic obstructive pulmonary disease and asthma?

Asthma and COPD cause similar symptoms. However, they are different diseases. 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 therefore limited.
- In asthma there is inflammation in the airways which makes the muscles in the airways 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.
- COPD is more likely than asthma to cause a chronic (ongoing) cough with phlegm.
- Night time waking with breathlessness or wheeze is common in asthma and uncommon in COPD.
- COPD is rare before the age of 35 whilst asthma is common in under-35s.
- There is more likely to be a history of asthma, allergies, eczema and hayfever (so-called atopy) in people with asthma.

**Both asthma and COPD are common, and some people have both conditions.** (See separate leaflet called '*Asthma*' for more information.)

## Do I need any tests?

COPD may be suspected by your doctor because of your symptoms. Examination of your chest can be normal in mild or early COPD. Using a stethoscope, your doctor may hear wheezes in your chest, or find signs of a chest infection. Your chest may show signs of being overinflated (hyperinflation). This is because the airways are obstructed and, as well as it being difficult for air to get into your lungs, it is also difficult for it to escape. Your history (symptoms) and physical examination will help your GP decide if COPD is likely.

## Spirometry

The most common test used in helping to diagnose the condition is called **spirometry**. This test estimates lung volumes by measuring how much air you can blow out into a machine. Two results are important: the amount of air you can blow out in one second (called forced expiratory volume in 1 second - FEV1) and the total amount you can blow out in one breath (called forced vital capacity - FVC). Your age, height and sex affect your lung volumes. So, *your* results are compared to the average predicted for your age, height and sex.

A value is calculated from the amount of air that you can blow out in one second divided by the total amount of air that you blow out in one breath (called FEV1/FVC ratio). A low value indicates that you have narrowed airways. The FEV1 compared with the predicted value shows how bad the COPD is.

COPD is divided into mild, moderate and severe groups, depending on the level of airflow obstruction. The airflow obstruction is the FEV1, measured with spirometry.

- **Mild (stage 1) COPD** is an FEV1 at least 80% of predicted value.
- **Moderate (stage 2) COPD** is an FEV1 between 50% and 79% of predicted value.
- **Severe (stage 3) COPD** is an FEV1 between 30% and 49% of predicted value.
- **Very severe (stage 4) COPD** is an FEV1 less than 30% of predicted value.

## Other tests

A chest X-ray may show signs of COPD and can be used to help exclude other serious conditions (including lung cancer). Occasionally, a special CT scan of the chest - high-resolution CT (HRCT) - is needed. A blood test to make sure you are not anaemic is often helpful. (Anaemia can lead to breathlessness.) Sometimes a blood test can show changes (called polycythaemia) that suggest you have chronically low levels of oxygen (hypoxia).

A pulse oximeter is a device can be clipped on to your finger to measure your heart rate (pulse) and measure the amount of oxygen in your circulation (oxygen saturation). Lower levels than normal tend to be found in people who have COPD, especially if you have an exacerbation of your symptoms.

## What is the progression and outlook?

Symptoms of COPD typically begin in people aged over 40 who have smoked for 20 years or more. A 'smoker's cough' tends to develop at first. Once symptoms start, if you continue to smoke, there is usually a gradual decline over several years. You tend to become more and more breathless. In time your mobility and general quality of life may become poor due to increasing breathing difficulties.

Chest infections tend to become more frequent as time goes by. Flare-ups of symptoms (exacerbations) occur from time to time, typically during a chest infection.

If the condition becomes severe then heart failure may develop. This is due to the the reduced level of oxygen in the blood and changes in the lung tissue which can cause an increase in pressure in the blood vessels in the lungs. This increase in pressure can put a strain on the heart muscle leading to heart failure. Heart failure can cause various symptoms including worsening breathlessness and fluid retention.

(**Note:** heart failure does not mean the heart stops beating (that is called cardiac arrest). Heart failure is when the heart does not pump blood very well.

**Respiratory failure** is the final stage of COPD. At this point the lungs are so damaged that the levels of oxygen in the blood are low. The waste product of breathing called carbon dioxide (CO<sub>2</sub>) builds up in the blood stream. People with end-stage COPD need palliative care to make them more comfortable and ease any symptoms.

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. About 8 in 10 men with mild COPD will survive for five years or more after diagnosis, compared with 7 in 10 women. The survival rate is lower in severe COPD. About 3 in 10 men and just over 2 in 10 women with severe disease will survive five years from diagnosis.

Depression and/or anxiety affect at least 6 in 10 people with COPD, and can be treated if recognised.

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

**Stop smoking.** This is the single most important piece of advice. If you stop smoking in the early stages of COPD it will make a huge difference. Damage already done to your airways cannot be reversed, but stopping smoking prevents the disease from worsening. It is never too late to stop smoking, 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.

Your cough may get worse for a while when you give up smoking. This often happens as the lining of the airways 'comes 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.

The NHS provides free help and advice for people having difficulty in stopping smoking. Medication (such as varenicline, brand name Champix® and bupropion, brand name Zyban®) and nicotine replacement therapy (such as patches and chewing gum) can be prescribed, and counselling offered. You could see your GP or practice nurse for further advice, or visit the NHS website: <http://smokefree.nhs.uk>

## What are the treatments for chronic obstructive pulmonary disease?

**Stopping smoking is the most important treatment.** No other treatment may be needed if the disease is in the early stage and symptoms are mild.

If symptoms become troublesome, one or more of the following treatments may be advised. (**Note:** treatments do not *cure* COPD. Treatments aim to ease symptoms. Some treatments may prevent some flare-ups of symptoms.)

As a general rule, a trial of 1-3 months of a treatment will give an idea if it helps or not. A treatment may be continued after a trial if it helps, but may be stopped if it does not improve symptoms).

It can be helpful to consider treatments for three separate problems.

- Treatments for stable COPD
- Treatments for exacerbations of COPD
- Treatments for end-stage COPD

## Treatments for stable chronic obstructive pulmonary disease

The main treatments are medications given in devices called inhalers. The medicine within the inhaler is in a powdered form which you breathe in (inhale). Some people find inhalers more difficult than others to use. The medicines in standard inhalers reach the lungs better if used with a spacer device. (See separate leaflet called '*Inhalers for Chronic Obstructive Pulmonary Disease*' for more information on the different inhaler medicines and devices.)

### Short-acting bronchodilator inhalers

An inhaler with a bronchodilator medicine is often prescribed. These relax the muscles in the airways (bronchi) to open them up (dilate them) as wide as possible. The same inhalers may be used if you have asthma. People often call them relievers.

They include:

- **Beta-agonist inhalers.** Examples are **salbutamol** (brand names include Airomir®, Asmasal®, Salamol®, Salbulin®, Pulvinal Salbutamol® and Ventolin®) and **terbutaline** (brand name Bricanyl®). These inhalers are often (but not always), blue in colour. Other inhalers containing different medicines can be blue too.

- **Antimuscarinic inhalers.** For example, **ipratropium** (brand name Atrovent®). These inhalers work well for some people, but not so well in others. Typically, symptoms of wheeze and breathlessness improve within 5-15 minutes with a beta-agonist inhaler, and within 30-40 minutes with an antimuscarinic inhaler. The effect from both types typically lasts for 3-6 hours. Some people with mild or intermittent symptoms only need an inhaler as required for when breathlessness or wheeze occur. Some people need to use an inhaler regularly. The beta-agonist and antimuscarinic inhalers work in different ways. Using two, one of each type, may help some people better than one type alone.

### Long-acting bronchodilator inhalers

These work in a similar way to the short-acting inhalers, but each dose lasts at least 12 hours. Long-acting bronchodilators may be an option if symptoms remain troublesome despite taking a short-acting bronchodilator.

- **Beta-agonist inhalers.** Examples are **formoterol** (brand names Atimos®, Foradil®, and Oxis®) and **salmeterol** (brand name Serevent® - a green-coloured inhaler). You can continue your short-acting bronchodilator inhalers with these medicines.
- **Antimuscarinic inhalers.** The only long-acting antimuscarinic inhaler is called **tiotropium** (brand name Spiriva®). The inhaler device is green-coloured. If you start this medication, you should stop ipratropium (Atrovent®) if you were taking this beforehand. There is no need to stop any other inhalers.

### Steroid inhalers

A steroid inhaler may help in addition to a bronchodilator inhaler if you have more severe COPD or regular flare-ups (exacerbations) of symptoms. Steroids reduce inflammation. Steroid inhalers are only used in combination with a long-acting beta-agonist inhaler. (This can be with two separate inhalers or with a single inhaler containing two medicines). The main inhaled steroid medications are:

- **Beclometasone.** Brands include Asmabec®, Beclazone®, Becodisks®, Clenil Modulite®, Pulvinal Beclometasone® and Qvar®. These inhalers are usually brown and sometimes red in colour.
- **Budesonide.** Brands include Easyhaler Budesonide®, Novolizer Budesonide® and Pulmicort®.
- **Ciclesonide.** Brand name Alvesco®.
- **Fluticasone.** Brand name Flixotide®. This is a yellow or orange coloured inhaler.
- **Mometasone.** Brand name Asmanex Twisthaler®.

A steroid inhaler may not have much effect on your usual symptoms, but may help to prevent flare-ups. In the treatment of asthma, these medicines are often referred to as preventers. Side-effects of steroid inhalers include oral (in the mouth) thrush, sore throats and a hoarse voice. These effects can be reduced by rinsing your mouth with water after using these inhalers, and spitting out.

Combination inhalers are available, usually containing a steroid medication and either a short-acting or long-acting beta-agonist.

Combination inhalers are useful if people have severe symptoms or frequent flare-ups. Sometimes it is more convenient to use just one inhaler device. Examples of combination inhalers are:

- Fostair® (formoterol and beclometasone).
- Seretide® (salmeterol and fluticasone). This is a purple-coloured inhaler.
- Symbicort® (formoterol and budesonide).

Because there are lots of different coloured inhalers available, it is helpful to remember their names, as well as the colour of the device. This might be important if you need to see a doctor who does not have your medical records (such as in A+E, if you are on holiday, or outside the normal opening hours of your GP surgery).

## Bronchodilator tablets

Theophylline is a bronchodilator (it 'opens' the airways) medicine that is sometimes used. It is used in stable COPD rather than in an acute exacerbation. Brand names of theophylline are Nuelin SA®, Slo-Phyllin® and Uniphyllin Continus®. Aminophylline is a similar drug (usually given by injection in hospital) but there are tablets (brands include Norphyllin® SR and Phyllocontin Continus®).

The body breaks down (metabolises) theophylline in the liver. This metabolism varies from person to person. The blood levels of the drug, therefore, can vary enormously. This is particularly the case in smokers, people with liver damage or impairment, and in heart failure. In some conditions, the breakdown is reduced, and blood levels increase. In other conditions, the breakdown is increased and so blood levels of theophylline fall. This is very important as the toxic (dangerous) dose for theophylline is only just above the dose that is needed for the medicine to work well.

Blood tests are done to measure the amount of theophylline in the blood, to check it is neither too high nor too low. Theophylline interacts with lots of other medicines too, so sometimes it cannot be prescribed, due to other medicines that you take. Theophylline commonly causes side-effects which include palpitations (fast heartbeat), nausea (feeling sick), headache and occasionally abnormal irregular heartbeat (arrhythmia) or even convulsions (fits).

## Mucolytic medicines

A mucolytic medicine such as **carbocisteine** (Mucodyne®), erdosteine (Erdotin®) and mecysteine (Visclair®) makes the sputum less thick and sticky, and easier to cough up. This may also have a knock-on effect of making it harder for bacteria (germs) 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 (usually two or three times per day) and is most likely to help if you have moderate or severe COPD and have frequent or bad flare-ups (exacerbations).

## Treatment of exacerbations

Treatment of an exacerbation of COPD involves adding extra medicines temporarily to your usual treatment. This is usually steroid tablets with or without antibiotics. These medicines are usually taken until your symptoms settle down to what is normal for you.

If you have frequent flare-ups then your doctor may advise on a self-management plan. This is a written plan of action agreed by you and your doctor on what to do as soon as possible after a flare-up starts to develop. For example, you may be given advice on how to increase the dose of your inhalers when needed. You may also be given some steroid tablets and/or antibiotics to have on standby so that you can start these as soon as possible when a flare-up first develops. You will also be told when you need to seek medical attention - for example if you are concerned that you are not responding to treatment.

## Steroid tablets

A short course of steroid tablets called (**prednisolone**) is sometimes prescribed if you have a bad flare-up of wheeze and breathlessness (often during a chest infection). Steroids help by reducing the extra inflammation in the airways which is caused by infections.

Steroid tablets are usually taken once per day, often for between 5 to 14 days. Depending on the strength of the tablet, you might need to take 6 or even 8 as a single daily dose. If your symptoms improve quickly, your doctor may tell you to stop taking the steroids at the end of the week. If your problems are more severe, the steroid tablets may be tailed off over several days or weeks. Occasionally, some patients take steroid tablets long-term. This is not always advised as there can be serious side-effects.

Some important side-effects of steroids include osteoporosis (thinning of the bones due to reduced bone density), bleeding in the stomach (gastrointestinal bleeds), a lowering of the immune system (immunosuppression) - making infections more common, weight gain (and a condition called Cushing's syndrome), and a lowering of the body's natural ability to make certain hormones (adrenal suppression). If you need to have steroid tablets long-term, you will usually be given some medicines to protect your bones and prevent osteoporosis. (See separate leaflet called '*Osteoporosis*' for more information.)

### **Antibiotics**

A short course of antibiotics is commonly prescribed if you have a chest infection, or if you have a flare-up of symptoms which may be triggered by a chest infection.

### **Admission to hospital**

If your symptoms are very severe, or if treatments for an exacerbation are not working well enough, you may need to be admitted to hospital. In hospital you can be monitored more closely. Often the same drugs are given to you but at higher doses or in a different form. Tests such as a chest X-ray or blood tests to measure how much oxygen there is in your blood (arterial blood gases) can be performed. Chest physiotherapy can be started to help you clear secretions (mucus) from your chest by coughing and suction machines.

If you are very breathless it may be impossible to use your inhaler. Nebulisers are machines that turn the bronchodilator medicines into a fine mist, like an aerosol. You breathe this in with a face mask or a mouth piece. Nebulisers are no more effective than normal inhalers but they are useful in people who are very fatigued (tired) with their breathing.

You may need oxygen to help you breathe. Sometimes a special machine called bilevel positive airway pressure (BiPAP) or continuous positive airway pressure (CPAP) is used to help you breathe. This is called noninvasive ventilation (NIV). It consists of a close-fitting facemask and drives oxygen into your lungs, forcing the airways open. It can make you feel a bit claustrophobic and it is quite noisy. In very severe cases, you might need more help with breathing, in an intensive care unit (ICU). A tube can be put into your windpipe and connected to a ventilator (a machine that 'breathes' for you). If you have severe underlying COPD (rather than just a severe exacerbation of COPD), this is not always the best option.

About 2-4 patients in 100 admitted to hospital because of their COPD will die due to that illness. Between 1 in 10 and 1 in 4 people admitted to ICU with severe COPD die.

## **End-stage chronic obstructive pulmonary disease**

### **Palliative care**

Palliative care should be discussed with all people with COPD who are likely to die in the coming year. It is always difficult to be accurate about prognosis (outlook). Mostly, health professionals talk in terms of 'days', 'months' or 'years' when discussing prognosis for any particular disease or illness.

As COPD progresses, the condition becomes more severe. You might have more frequent exacerbations and/or admissions to hospital. These factors can give a clue as to how advanced the illness is. Palliative care is usually started in COPD when you are on the maximum medication and are continuing to deteriorate (get worse). Sometimes in these situations you might choose to remain at home for any/all treatments, rather than having further hospital admissions, as things get worse.

Palliative care means care or treatment to keep a person as comfortable as possible, to reduce the severity of the disease, rather than to cure it. Mostly it is about helping you with your symptoms, to make them easier to bear. Your quality of life in the end stages of COPD is very important. Palliative care is not quite the same as terminal (end of life care), when someone is dying and death is expected within a few days. Palliative care can be given in a hospice, but is just as likely to be provided by your GP, district nurse or community palliative care team. Palliative care involves not just physical treatments. Psychological and spiritual wellbeing are important too. The aim is that both you and your family feel supported and that your care is planned. The idea is that a multidisciplinary team, with different healthcare professionals can anticipate any problems before they happen, and help you with access to medication and any equipment that might be needed.

### **Home oxygen**

This may help *some* people with severe symptoms or end-stage COPD. It does not help in all cases. Unfortunately, just because you feel breathless with COPD it does not mean that oxygen will help you. Great care has to be taken with oxygen therapy. *Too much* oxygen can actually be *harmful* if you have COPD.

To be considered for oxygen you would need to have very severe COPD, and be referred to a respiratory specialist (consultant) at a hospital. Your GP cannot just prescribe oxygen to you in this situation. Tests are done to see how bad your COPD is, and how low the oxygen levels in your blood are. This might be done with a pulse oximeter (mentioned earlier) or by taking a sample of blood from an artery in your wrist (blood gases). These tests are needed to decide whether oxygen will help you or not. The monitoring of oxygen levels may take place over a period of several weeks, at rest and with exercises.

If found to help, oxygen needs to be taken for at least 15-20 hours a day to be of benefit. Oxygen can be given with a face mask or through little tubes (nasal cannulae or 'nasal specs') that sit just under your nostrils. Portable oxygen is available in cylinders, but if you need long-term oxygen therapy (LTOT), for long periods of the day, an oxygen concentrator is required. This is a big machine (about two feet square and two and a half feet tall) that plugs into a normal electrical socket. The concentrator takes oxygen from the air in your room, and concentrates it, meaning that it is separated from other gases in air, so you only have pure oxygen to breathe in. A back-up supply of oxygen cylinders is provided if you have a concentrator, in case of an electrical power cut or machine breakdown.

Normally, you will only be considered for oxygen if you do not smoke. There is a serious risk of explosion or fire when using oxygen if you smoke.

Oxygen might be used to treat an exacerbation of COPD *in hospital* but would not be prescribed short-term for an exacerbation to be used at home. Oxygen might be used in an emergency whilst awaiting transfer to a hospital (for example, by a paramedic).

### **Other medicines**

Medicines such as morphine and codeine may be prescribed to try to reduce your coughing, and to help with breathlessness. Hyoscine is a medication that can be given to try to dry up secretions from your lungs. Anxiety is a common symptom when you are breathless. Morphine can help the feelings of anxiety. In some cases, other anti-anxiety drugs (such as diazepam) can be given. Depression and anxiety are common in patients with COPD, at all stages of the disease. You may already be prescribed medication for this.

## Other treatments in chronic obstructive pulmonary disease

### Surgery

This is an option in a very small number of cases. Removing a section of lung that has become useless *may* improve symptoms. Sometimes large air-filled sacs (called bullae) develop in the lungs in people with COPD. A single large bulla might be suitable for removal with an operation. This *can* improve symptoms in *some* people. Lung transplantation is being studied, but is not a realistic option in most cases.

## What can I do to help?

### Get immunised

Two immunisations are advised.

- A yearly 'flu jab' each autumn protects against possible influenza and any chest infection that may develop due to this.
- Immunisation against pneumococcus (a germ that can cause serious chest infections). This is a one-off injection and not yearly like the 'flu jab'.

### Try to do some regular exercise

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 or physical activity is good. However, ideally the activity that you do should make you at least a little out of breath, and be for at least 20-30 minutes, at least 4-5 times a week. If you are able, a daily brisk walk is a good start if you are not used to exercise. But, if possible, try to increase the level of activity over time.

You may be referred for pulmonary rehabilitation or be under the care of a community respiratory team. You will be given exercises and advice to try to help you stay as fit as possible. This is important because, effectively, you may become disabled due to your breathlessness.

### Try to lose weight if you are overweight

Obesity can make breathlessness worse. If you are overweight or obese it is harder to exercise, and exercise makes you more breathless. It becomes a bit of a vicious cycle. If you are obese the chest wall is made heavy by fat. This means that you have to work much harder to breathe in and take a good breath, to inflate the lungs and expand the chest. A dietician may be able to give you advice on healthy eating and weight loss.

## Chronic obstructive pulmonary disease and flying

If you have COPD and plan to fly then you should discuss this with the airline. Some airlines may request a fitness to fly assessment. Although your GP might be able to give *some* advice, they are not well placed to make the final decision. Your respiratory specialist may be able to help or alternatively you may need to see a specialist in aviation medicine.

When travelling by air you should keep your medicines, especially your inhalers, in your hand luggage. If you are on LTOT, you will need to inform the airline. It is possible to use your own oxygen in-flight but individual circumstances may differ. Some people with COPD are more likely to need in-flight oxygen. Some people are more at risk of a punctured lung (pneumothorax) at altitude, despite the fact that the aircraft cabin is pressurised.

## Regular follow-up

If you have COPD, your GP surgery will probably call you yearly for a check-up or annual review. You can discuss your medication and the GP or nurse might assess your inhaler technique. Regular review allows monitoring of the severity of your COPD, and gives an opportunity for health promotion such as help with stopping smoking or weight control. Reviews should happen more often if you have frequent exacerbations or complications, if you have very severe COPD, or if you have recently been discharged from hospital.

## In summary

- COPD is usually caused by smoking.
- COPD should be considered as a possible diagnosis in anyone aged over 35 years old who smokes, or has ever smoked *and* has persistent problems such as cough with lots of phlegm, breathlessness or wheeze, and recurrent chest infections.
- 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 increasing the dose of usual treatments. This may be combined with a short course of steroid tablets and/or antibiotics.

## Further help and information

### British Lung Foundation

73-75 Goswell Road, London EC1V 7ER

Tel (Helpline): 08458 50 50 20 Web: [www.lunguk.org](http://www.lunguk.org)

### NHS Home Oxygen Service

An NHS website providing information to patients and healthcare professionals about LTOT. Web: [www.homeoxygen.nhs.uk](http://www.homeoxygen.nhs.uk)

## Further reading & references

- [Chronic obstructive pulmonary disease, NICE Clinical Guideline \(June 2010\)](#); Management of chronic obstructive pulmonary disease in adults in primary and secondary care (partial update). This guideline partially updates and replaces NICE clinical guideline 12
- [Chronic obstructive pulmonary disease](#), Clinical Knowledge Summaries (November 2010)
- [British National Formulary](#); login required
- [No authors listed](#); Managing stable chronic obstructive pulmonary disease. *Drug Ther Bull.* 2001 Nov;39(11):81-5.
- [Poole PJ, Black PN](#). Mucolytic agents for chronic bronchitis or chronic obstructive pulmonary disease. *Cochrane Database of Systematic Reviews* 1998 (updated 2006)

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