

Chronic obstructive pulmonary disease (COPD)

Introduction

Chronic obstructive pulmonary disease (COPD) is the name for a collection of lung diseases including chronic bronchitis, emphysema and chronic obstructive airways disease.

People with COPD have difficulties breathing, primarily due to the narrowing of their airways, this is called airflow obstruction.

Typical symptoms of COPD include:

increasing breathlessness when active

a persistent cough with phlegm

frequent chest infections

Why does COPD happen?

The main cause of COPD is smoking. The likelihood of developing COPD increases the more you smoke and the longer you've been smoking. This is because smoking irritates and inflames the lungs, which results in scarring.

Over many years, the inflammation leads to permanent changes in the lung. The walls of the airways thicken and more mucus is produced. Damage to the delicate walls of the air sacs in the lungs causes emphysema and the lungs lose their normal elasticity. The smaller airways also become scarred and narrowed. These changes cause the symptoms of breathlessness, cough and phlegm associated with COPD.

Some cases of COPD are caused by fumes, dust, air pollution and genetic disorders, but these are rarer.

Who is affected?

COPD is one of the most common respiratory diseases in the UK. It usually affects people over the age of 35, although most people are not diagnosed until they are in their fifties.

It is thought there are over 3 million people living with the disease in the UK, of which only about 900,000 have been diagnosed. This is because many people who develop symptoms of COPD do not get medical help because they often dismiss their symptoms as a 'smoker's cough'.

COPD affects more men than women, although rates in women are increasing.

Diagnosis

It is important that COPD is diagnosed as early as possible so treatment can be used to try to slow down the deterioration of your lungs. You should see your DOCTOR if you have any of the symptoms mentioned above.

COPD is usually diagnosed after a consultation with your doctor, which may be followed by breathing tests.

Treating COPD

Although the damage that has already occurred to your lungs cannot be reversed, you can slow down the progression of the disease. Stopping smoking is particularly effective at doing this.

Treatments for COPD usually involve relieving the symptoms with medication, for example by using an inhaler to make breathing easier.

Surgery is only an option for a small number of people with COPD.

Living with COPD

COPD can affect your life in many ways, but help is available to reduce its impact.

Simple steps such as keeping healthy, being as active as possible, learning breathing techniques, and taking your medication can help you to reduce the symptoms of COPD.

Can COPD be prevented?

Severe COPD can usually be prevented by making changes to your lifestyle.

If you smoke, stopping is the single most effective way to reduce your risk of getting the condition.

Research has shown you are up to four times more likely to succeed in giving up smoking if you use support professionally.

Also avoid exposure to tobacco smoke as much as possible.

Symptoms of COPD

The symptoms of chronic obstructive pulmonary disease (COPD) usually develop over a number of years, so you may not be aware you have the condition.

COPD does not usually become noticeable until after the age of 35. See your DOCTOR if you have the following symptoms:

increasing breathlessness when exercising or moving around

a persistent cough with phlegm that never seems to go away

frequent chest infections, particularly in winter

wheezing

If you have these symptoms, you should see your DOCTOR to ensure you are diagnosed and treated as soon as possible.

If you have COPD, the airways of the lungs become inflamed and narrowed. As the air sacs get permanently damaged, it will become increasingly difficult to breathe out.

Symptoms of COPD are often worse in winter, and it is common to have two or more flare-ups a year. A flare-up (also known as an exacerbation) is when your symptoms are particularly bad. This is one of the most common reasons for people being admitted to hospital.

Other signs of COPD can include:

weight loss

tiredness and fatigue

swollen ankles

Chest pain and coughing up blood (haemoptysis) are not common symptoms of COPD, they are usually caused by other conditions, such as lung cancer.

While there is currently no cure for COPD, the sooner the condition is diagnosed and appropriate treatment begins, the less chance there is of severe lung damage.

Causes of COPD

There are several things that may increase your risk of developing chronic obstructive pulmonary disease (COPD), many of which can be avoided.

Things you can change

You can change some of the things that make COPD more likely.

Smoking

Smoking is the main cause of COPD. At least four out of five people who develop the disease are, or have been, smokers. The lining of the airways becomes inflamed and permanently damaged by smoking. This damage cannot be reversed. Around 10-25% of smokers develop COPD.

Passive smoking

Exposure to other people's smoke increases the risk of COPD.

Fumes and dust

Exposure to certain types of dust and chemicals at work, including grains, isocyanates, cadmium and coal, has been linked to the development of COPD, even in people who do not smoke.

The risk of COPD is even higher if you breathe in dust or fumes in the workplace and you smoke.

Air pollution

According to some research, air pollution may be an additional risk factor for COPD. However, at the moment it is not conclusive and research is continuing.

Things you cannot change

There are a few factors for COPD that you cannot change.

Having a brother or sister with severe COPD

A research study has shown that smokers who have brothers and sisters with severe COPD are at greater risk of developing the condition than smokers who do not.

Having a genetic tendency to COPD

There is a rare genetic tendency to develop COPD called alpha-1-antitrypsin deficiency. This causes COPD in a small number of people (about 1%). Alpha-1-antitrypsin is a protein that protects your lungs. Without it, the lungs can be damaged by other enzymes that occur naturally in the body.

People who have an alpha-1-antitrypsin deficiency usually develop COPD at a younger age, often under 35.

Diagnosing COPD

Chronic obstructive pulmonary disease (COPD) is usually diagnosed after a consultation with your DOCTOR, as well as breathing tests.

If you are concerned about the health of your lungs and have symptoms that could be COPD, see your DOCTOR as soon as you can.

Being diagnosed early means you will receive appropriate treatment, advice and help to stop or slow the progression of COPD.

At a consultation, your doctor will ask about your symptoms and how long you have had them, and whether you smoke, or used to smoke. They will examine you and listen to your chest using a stethoscope. You may also be weighed and measured in order to calculate your body mass index (BMI).

Your doctor will also check how well your lungs are working with a lung function test called spirometry.

Spirometry

To assess how well your lungs work, a breathing test called spirometry is carried out. You will be asked to breathe into a machine called a spirometer.

The spirometer takes two measurements: the volume of air you can breathe out in one second (called the forced expiratory volume in one second or FEV1) and the total amount of air you breathe out (called the forced vital capacity or FVC).

You may be asked to breathe out a few times to get a consistent reading.

The readings are compared with normal measurements for your age, which can show if your airways are obstructed.

Other tests

You may have other tests as well as spirometry. Often, these other tests will help the doctor rule out other conditions that cause similar symptoms.

Chest X-ray

A chest X-ray will show whether you have another lung condition which may be causing symptoms, such as lung cancer.

Blood test

A blood test will show whether your symptoms could be due to anaemia, as this can also cause breathlessness.

Further tests

Some people may need more tests. The tests may confirm the diagnosis or indicate the severity of your COPD. This will help you and your doctor plan your treatment.

Electrocardiogram (ECG) and echocardiogram

An electrocardiogram (ECG) or echocardiogram may be used to check the condition of your heart.

An ECG involves attaching electrodes (sticky metal patches) to your arms, legs and chest to pick up the electrical signals from your heart.

An echocardiogram uses sound waves to build a detailed picture of your heart. This is similar to an ultrasound scan.

Peak flow test

To confirm you have COPD and not asthma, your doctor might ask you to take regular measurements of your breathing using a peak flow meter, at different times over several days. The peak flow meter measures how fast you can breathe out.

Blood oxygen level

The level of oxygen in your blood is measured using a pulse oximeter, which looks like a peg and is attached to the finger. If you have low levels of oxygen, you may need an assessment to see whether extra oxygen would help you.

Blood test for alpha-1-antitrypsin deficiency

If the condition runs in your family or you developed the symptoms of COPD under the age of 35 and have never smoked, you will probably have a blood test to see if you are alpha-1-antitrypsin deficient.

Computerised Tomography (CT) scan

Some people may need a CT scan. This provides more information than an X-ray and can be useful in diagnosing other lung diseases or assessing changes to your lungs due to COPD.

Other breathing tests

If your symptoms seem worse than would be expected from your spirometry results, your doctor may decide you need more detailed lung function tests. You may be referred to a hospital specialist for these tests.

Phlegm sample

Treating COPD

The doctor may take a sample of phlegm to check whether it has been infected.

There is no cure for chronic obstructive pulmonary disease (COPD), but treatment can help slow the progression of the condition and reduce the symptoms.

If you smoke, the best way to prevent COPD from getting quickly worse is to stop smoking and avoid further damage to your lungs. There is support available to help you quit.

There are also medicines that can help relieve the symptoms of COPD. The type of medicine you take will depend on how severe your COPD is and what symptoms you have. You may have to try different medicines to find which suits you best.

Often, people with COPD have to take a combination of medicines. In addition, many people keep different medicines available in case they have a flare-up, when symptoms are particularly bad. Your doctor will discuss the best options with you.

The National Institute for Health and Clinical Excellence (NICE) has produced guidance about the diagnosis and treatment of COPD. The Department of Health has been working with patients and healthcare providers to produce a strategy for COPD.

Stopping smoking is the main way for people with COPD to help themselves feel better and is the only proven way to reduce the rate of decline in lung function in people with COPD.

Stopping smoking at an early stage of the disease makes a huge difference. Any damage already done to the airways cannot be reversed, but giving up smoking can slow the rate at which the condition worsens.

If COPD is in the early stages and symptoms are mild, no other treatments may be needed. However, it is never too late to stop smoking. Even people with fairly advanced COPD are likely to benefit from quitting, which may prevent further damage to the airways.

Research has shown you are up to four times more likely to give up smoking successfully if you use support along with stop-smoking medicines such as tablets, patches or gum. Ask your doctor about this.

Living with COPD

Chronic obstructive pulmonary disease (COPD) can affect many aspects of your life. However, there are some simple tips and techniques to help reduce its impact.

Self-care

Self-care involves taking responsibility for your own health and wellbeing with support from people involved in your care.

People living with long-term conditions can benefit enormously if they receive support for self-care. They can live longer, have less pain, anxiety, depression and fatigue, a better quality of life and are more active and independent. Learn more about self-care.

Take your medication

It's important to take your medication as prescribed, even if you start to feel better. Continuous medication can help prevent flare-ups. If you have questions or concerns about the medication you're taking or side effects, talk to your healthcare team.

It may also be useful to read the information leaflet that comes with the medication about possible interactions with other drugs or supplements. Check with your healthcare team if you plan to take any over-the-counter remedies, such as painkillers, or any nutritional supplements. This is because these can sometimes interfere with your medication.

Regular reviews

Because COPD is a long-term condition, you'll be in regular contact with your healthcare team. A good relationship with the team allows you to easily discuss your symptoms or concerns. The more the team knows, the more they can help you.

Regular meetings with a healthcare professional may also mean that any complications of COPD are spotted early. These include:

cor pulmonale, a condition where there is raised pressure in the arteries of the lungs (the pulmonary arteries), and the body retains fluid.

Keeping well

Everyone with a long-term condition such as COPD is encouraged to get a yearly flu jab each autumn to protect against flu. They are also recommended to get an anti-pneumococcal vaccination, a one-off injection that protects against serious infection caused by pneumococcal bacteria.

Check the weather

Check the forecast as the weather might have an effect on COPD symptoms. Cold spells lasting at least a week and periods of hot weather and humidity can cause breathing problems.

Watch what you breathe

To reduce symptoms of COPD and chances of a flare-up, there are certain things that should be avoided if possible, including:

dusty places

fumes, such as car exhausts

smoke

air freshener sprays or plug-ins

strong-smelling cleaning products, unless there is plenty of ventilation

hairspray

perfume

hide

Exercise

Healthy living

People with COPD who exercise or keep active regularly have improved breathing, less severe symptoms and a better quality of life.

For most people with COPD who are disabled by their breathlessness, a structured programme of pulmonary rehabilitation provided by experienced healthcare professionals does the most good. Getting breathless is unpleasant but it isn't harmful. Every patient should exercise as much as they can, however limited that may be, twice a day. Even chair-bound people can do some arm and upper-body movements.

Research shows that pulmonary rehabilitation improves exercise tolerance, breathlessness and health-related quality of life. It results in people seeing doctors less often and spending less time in hospital.

Maintain a healthy weight

Carrying extra weight can make breathlessness worse. Therefore, it is a good idea to lose weight if you are overweight. This can be difficult because the breathlessness caused by COPD can make it hard to exercise.

However, some people with COPD find that they lose weight. Eating food high in protein and taking in enough calories is important to maintain a healthy weight.

Research has shown that people with COPD who are underweight will have fewer COPD symptoms if they increase their weight.