Emphysema and COPD

Chronic obstructive pulmonary disease (COPD) is a serious long-term lung condition that limits airflow causing shortness of breath.[1] It worsens over time and is largely not reversible.[2] Smoking is the main cause of COPD.[3,4]

COPD includes these diseases:

- emphysema
- obstruction of the small airways.[1,4]

Chronic bronchitis also commonly co-occurs with COPD.[1]

What is emphysema?

Emphysema, or 'lung rot', is a disease that slowly destroys the walls of the tiny air sacs in your lungs over many years.

These air sacs – called alveoli – allow oxygen to pass into your blood and remove carbon dioxide from your body. When the walls of your air sacs are destroyed, it reduces the amount of lung tissue that oxygen can pass through. The tiny airways that lead to your air sacs can also collapse due to damage from smoking. This decreases the amount of oxygen transferred to your blood. Your lungs cannot repair this damage.[5-7]

The irritants in tobacco smoke also slowly destroy the normal lung structure. Your lungs become less elastic, making it harder to breathe in and out.[1,4]

The main symptom of emphysema is a feeling of breathlessness that gradually becomes more severe over the years.[6] The damage to your lungs occurs for many years before the effects are felt. While it does not result in as many deaths as lung cancer, it is a very disabling disease.[6,8]

Almost all cases of emphysema are from cigarette smoking and it mainly affects older people who have smoked for many years. Most people who have smoked around 20 cigarettes per day all their life have some degree of emphysema.[5,9] About two out of five people who smoke heavily develop substantial lung destruction.[4]

What is obstruction of the small airways?

Small airways obstruction is a disease that occurs when your lungs become inflamed from cigarette smoke.

It results in the narrowing of your lungs' small airways (small bronchi and bronchioles) that lead to your air sacs. At the same time, mucus collects in your small airways, further limiting the air flow to your air sacs.[1] The main symptom is feeling breathless, as your small airways are less able to increase the flow of air when you need it, for example, when walking up stairs.[4]

What is chronic bronchitis?

Chronic bronchitis is defined as coughing with phlegm (mucus) that occurs for three months in a year, over at least a two year period.[1]

Your lungs become inflamed and produce extra mucus in the large and small bronchial airways in response to constant irritation by tobacco smoke.[1,4] People with chronic bronchitis are more likely to have lung infections.[1,10]

Chronic bronchitis often co-occurs with COPD. Chronic bronchitis doesn't always affect air flow, but it can if the inflammation spreads into your smaller airways.[1] If you have COPD, chronic bronchitis can worsen the disease and increase your risk of having to go to hospital.[1]

How does smoking cause COPD?

Your lungs have a set of defences to deal with particles you breathe in every day, such as dust, viruses or bacteria. Cigarette smoke contains many chemicals that weaken or overwhelm these defences and also cause direct damage to lung tissue.[1]

Smoking affects your immune system, causing your lungs to become inflamed.[1,4,11] Your immune system is less able to sense and defend against viruses and bacteria.[12,13]

Chemicals in tobacco smoke damage the lung cells lining your airways, and that also causes inflammation.[1,4,13] All people who smoke have inflammation in their lungs.[4,7]

Smoking interferes with your body's method of cleaning out your lungs. Cigarette smoke causes the overproduction of mucus and harm your cilia – tiny hair-like structures that line the airways and clean out dust and dirt.[5] This means it takes longer to clear mucus and toxic substances from your lungs, increasing your risk of infection.[1]

COPD gets worse over time

COPD causes shortness of breath that gradually worsens over the years as smoking continues. At first, you may only notice a slight shortness of breath every morning and evening. Then a short walk may be enough to cause shortness of breath and wheezing. With further damage, breathing may become a major effort. By the time you feel short of breath, your lungs are already damaged.[6]

COPD is a slow, progressive disease and commonly causes years of sickness and suffering. Patients with COPD are vulnerable to heart and lung failure and other potentially fatal conditions.[6,14] The effects of COPD can be more severe in people who have an underlying lung disease, such as asthma.[12]

The damage to lung tissue in COPD is permanent and irreversible. However, doctors can help by prescribing treatment to make life more comfortable for patients with the disease.[2]

What happens when I quit smoking?

The most important way to prevent and treat COPD is to quit smoking.[2,11]

Lung function is measured by how much air you can breathe out during a forced breath.[1,4] All adults lose lung function as they age – this is known as age-related lung function decline. But this process occurs earlier and faster among people who smoke, with some people more badly affected than others.[4,12] COPD is diagnosed after a significant loss of lung function that can't be reversed.[1,4,12]

The benefits of quitting depend on how many cigarettes you smoke, how long you've smoked, and whether you already have COPD. These are the typical benefits of stopping smoking.

- If you don't have COPD, your rate of lung function decline slows down to that seen in people who have never smoked within five years of stopping smoking. However, you will not regain the lung function you have already lost. If you quit before the age of 40, you are not likely to develop COPD.[7]
- If you have mild to moderate COPD, your lung function is likely to improve in the year after you stop smoking. After that, age-related decline in lung function slows down to less than half of that seen in people who keep smoking. Quitting prevents or delays the development of severe COPD.[7]
- If you have severe COPD, quitting slows down your rate of lung function decline and you are less likely to be hospitalised due to COPD than someone who keeps smoking.[7]
- After you quit, your risk of death from COPD is lower compared to those who people who keep smoking.[1,7]
- Stopping smoking completely is vital. Cutting down the number of cigarettes you smoke per day does *not* slow down your more rapid loss of lung function.[15]

Short term benefits

- For a majority of people who smoke, stopping smoking improves the lung's cleaning systems after three months.[17,18]
- If you quit before developing COPD, your small airways improve after a week and they continue to improve over the following year.[19,20] After a year, the inflammation in your lungs may have also decreased.[21]
- Symptoms of chronic bronchitis, such as cough and wheeze, decrease by one to two months after stopping smoking.[7,22] Phlegm decreases within a few months. The likelihood of cough and phlegm returns to the level seen in people who have never smoked within five years.[7]

The earlier you quit smoking, the better for your health.

Help to stop smoking

The best way to **stop smoking** is to talk with Quitline and use stop smoking medications. These include prescribed tablets or nicotine patches, lozenges, mouth spray, inhalator or gum. Your doctor or pharmacist can advise you on what would suit you.

If you are taking any medicines, talk with your doctor or pharmacist as they may need to look at your medicines before you stop smoking.

Contact Quitline

Quitline is a welcoming, free and confidential counselling service. Quitline counsellors are experts at helping you gain the skills to break free from smoking or vaping, or both. We will help you build and keep up your motivation to quit and help you create a quit plan that works for you. We listen carefully and answer your questions without judgement and can support you throughout your quit journey. Quitline counsellors can also support you if you are using vapes to stop smoking and can help you stop vaping.

There are many ways to contact Quitline:

- **Call 13 7848** Monday to Friday 8am to 8pm
- **Text** 'call back' to **0482 090 634** (VIC, SA, WA, NT only)
- **Webchat** at quit.org.au (VIC, SA, WA, NT only)
- **Facebook Messenger @quitvic** or **WhatsApp 61 385 832 920** (VIC, SA, WA, NT only)
- Ask Quitline to call you back **for free** at quit.org.au/callback

Aboriginal and Torres Strait Islander people can call Quitline and ask to yarn with an Aboriginal and/or Torres Strait Islander Quitline Counsellor if they wish, for Culturally sensitive support, delivered by mob, for mob.

Quitline has worked with people in the LGBTIQA+ community to make Quitline a safe and inclusive space. You can speak to Quitline in a language other than English: call 13 7848 and tell us you need an interpreter and we will call you back. We also use the National Relay Service with people with a hearing or speech impairment.

Go online: quit.org.au

Create your own quit plan to stop smoking or vaping with easy-to-find information. You'll find tips, distractions, tools and stories from people who quit.

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