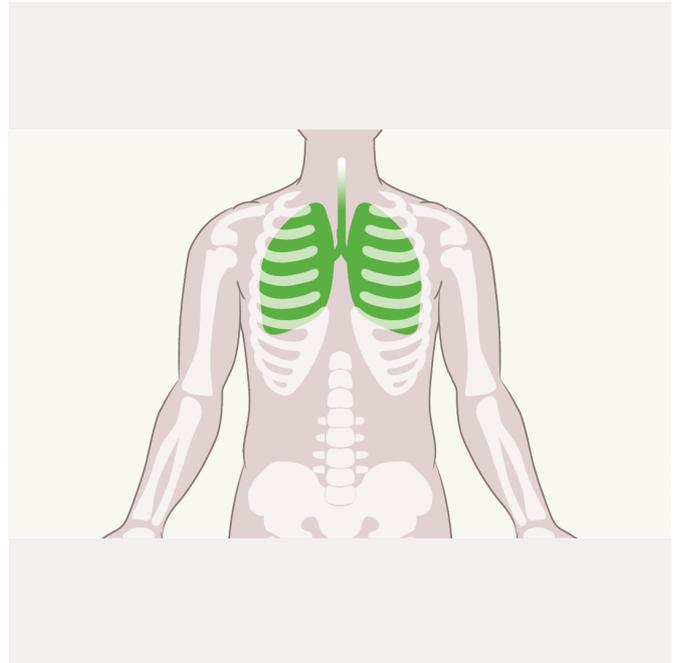


Factsheet **The lungs**

Key points

- Some lung problems can be more serious in people with HIV and occur more frequently.
- Smoking is a very common cause of lung disease.
- Antibiotics can be used to treat and prevent bacterial lung infections.
- Regular exercise can improve the efficiency of your lungs.



The lungs are organs found in the chest, either side of the heart, protected by the ribcage. The right lung tends to be larger than the left lung. The lungs are covered with a thin layer, or membrane, called the pleura, and the rib cage with another membrane. The two membranes slide over each other as we breathe allowing the lungs to expand and contract.

Inside, the lungs look like sponges and are made up of a mass of fine tubes. The smallest of these tubes are air sacs called alveoli, the walls of which are covered in tiny blood vessels.

The lungs and breathing

The role of the lungs is to absorb oxygen from the air and transfer it to the blood where it is then circulated around the body.

Each time you breath in, air is transported down the nose or throat into the windpipe (trachea) and into two smaller tubes called bronchi; one going to the left lung, the other to the right. The air is then divided into smaller airways called bronchioles until it reaches the alveoli. Inside the alveoli, oxygen moves into the tiny blood vessels forming the walls and is picked up by red blood cells ready to be transported around the body. At the same time, waste products in the form of carbon dioxide move in the opposite direction; travelling from the blood into the alveoli and onward through the lungs to be breathed out.

Lung disease

Symptoms such as coughing, shortness of breath, coughing up blood, phlegm or mucus, and pain in the lungs are all signs of a problem in the lungs.

As with anybody else, people with HIV can contract colds or [influenza \(flu\)](#), which can affect the chest, causing symptoms such as a cough, and the production of phlegm. These normally clear up in a few days and cause no lasting damage. There are, however, some lung problems which are seen more often in people with HIV which can be very serious.

Although anybody can become ill with [bacterial pneumonia](#), pleurisy (inflammation of the membrane surrounding the lungs), and bronchitis, these can be more serious in people with HIV and occur with more frequency, particularly if they have a depressed immune system.

"Taking HIV treatment can prevent your immune system becoming so weak that you develop serious lung infections."

Pneumonia due to pneumocystis (PCP) affects the lungs and is normally seen only in people with a CD4 count below 200. It is rare in countries where people have access to modern medical care. The cancers [Kaposi's sarcoma](#) and [non-Hodgkin's lymphoma](#), which are more common in people with very low CD4 counts, can also affect the lungs.

Tuberculosis (TB) is seen in increased rates amongst people with HIV and globally, it is the leading causes of illness and death amongst people with HIV. TB can develop at any time during HIV infection. People with weakened immune systems are more vulnerable to infection with TB. TB can be treated and cured.

Smoking is a very common cause of lung-related problems and is the main cause of lung cancer.

Lung cancer is more common in HIV-positive people than in the general HIV-negative population.

Smoking is also the leading cause of chronic obstructive pulmonary disease (COPD), a group of lung diseases which cause breathing difficulties. Studies have shown that people with HIV are at an increased risk of COPD, whether or not they smoke. However, smokers are much more likely to report symptoms of COPD. One study found that smoking has a greater impact on COPD in people living with HIV than in HIV-negative people.

Tests

If you have any kind of breathing problem, your doctor will listen to your chest with a stethoscope to assess how well your lungs are working.

Other common **tests** to check for infection or disorders include chest X-rays and, sometimes, an induced sputum test, where a mist of salty water is inhaled in order to 'induce' the patient to cough up sputum from the lungs. A bronchoscopy may also be used, where a small camera is passed down the nose, and a transbronchial biopsy involves taking small samples of lung tissue for checking. Alternatively, a small piece of pleura may be removed via the chest wall; a pleural biopsy. Lung-function tests, which measure the ability to transfer oxygen and how well the lungs inflate, may also be used. A body scan may be used to look for some infections or cancers.

Treatments

Antibiotics can be used to treat and prevent bacterial lung infections such as pneumonia, and can also be successfully used to treat PCP and TB. Taking HIV treatment can prevent your immune system becoming so weak that you develop serious lung infections.

Chemotherapy, radiotherapy and surgery are used to treat cancers in the lungs.

Keeping your lungs healthy

Smoking is responsible for a lot of lung disease so stopping **smoking** will improve the health of your lungs. Taking regular **exercise** which makes you out of breath improves your lungs' efficiency. Ensuring that you receive regular check-ups at your HIV clinic will mean that you are monitored and treated for any possible HIV-related lung problems. Taking HIV treatment will keep your immune system strong. **And eating a diet rich in fresh fruit and vegetables will help promote your general health.**

Find out more

TB and HIV Basic leaflet with pictures

Smoking Simple factsheet

Lung cancer Simple factsheet