

How the Lungs Work

Healthy Lung

AIR with **OXYGEN** enters the lung through the mouth and nose. The air travels through airways called the **BRONCHIAL TREE**. The bronchial tree has millions of branches, called **BRONCHIAL TUBES**. The bronchial tubes are surrounded by muscles.

Inside the bronchial tubes are the hair-like **CILIA**. Cilia work like millions of tiny sweepers, to keep the lung clean from dust, nicotine, bacteria, pollen, and other irritants. They do this by constantly moving a thin layer of mucus from the lungs toward the mouth.

At the end of the bronchial tubes are air sacs called **ALVEOLI**. The alveoli are like balloons. They expand when air is breathed in, and shrink when air is let out.

Around the alveoli is a network of small blood vessels called **CAPILLARIES**.

When a person breathes in, oxygen passes through the alveoli and enters the capillaries. There, it's exchanged for **CARBON DIOXIDE** (stale air). The stale air leaves the lung when a person breathes out.

Unhealthy Lung

Asthma

Asthma happens when the **BRONCHIAL TUBES** get irritated causing the muscles around the lungs to contract. The lining inside the bronchial tubes swells and there's more mucus. This causes the airway to narrow, reducing air flow and making it hard to breathe.

Chronic Bronchitis

Chronic bronchitis happens when lungs are exposed to pollution, irritation, or inflammation for a long time. The lung loses its ability to clean itself, the airways get weaker, and there's more mucus. This causes the lung to become blocked, making it harder for air to flow through.

Emphysema

Emphysema happens when the **ALVEOLI** (air sacs) are weak or destroyed. Stale air (carbon dioxide) can't get out of the lungs. Instead, it stays in the alveoli. Because of this, fresh oxygen can't get into the blood stream.

Chronic Obstructive Pulmonary Disease (COPD)

COPD is used to describe chronic (long-term) lung conditions. The condition can be bronchitis, emphysema, or a combination of the two.

