

# Lung Health Basics

## What to Know About Lungs and Breathing

Boost your **lung health literacy** by learning about these basic lung anatomy terms and conditions. This resource also describes some of the tests doctors use to see how well the lungs are working, plus treatment devices and methods to help those with lung conditions breathe easier.

### General Lung Terms

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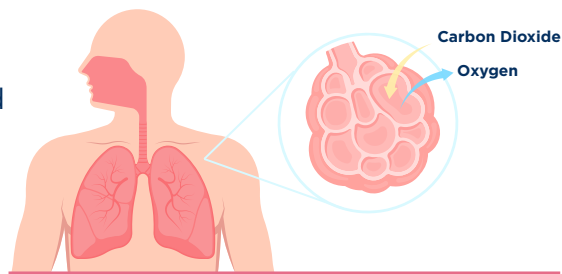
- Lungs
- Pulmonary
- Respiratory system
- Gas exchange
- Oxygen
- Airways
- Alveoli
- Ventilation

The **lungs** are the pair of pinkish-gray, spongy organs in your chest. They supply your body with oxygen and remove carbon dioxide, a waste gas, from your body.

**Pulmonary** means having to do with the lungs.

The **respiratory system** is made up of the organs that are involved in breathing. These include the nose, throat, larynx (voice box), trachea (windpipe), and lungs.

**Gas exchange** happens when you breathe. Oxygen moves from your lungs to your blood and carbon dioxide moves from your blood to your lungs.



**Oxygen** is a colorless, odorless gas that is needed for plant and animal life. Oxygen that you breathe in enters the blood from the lungs and travels to the tissues.

The **airways** are tubes that carry air in and out of your lungs.

**Alveoli** are tiny air sacs at the end of the branches of air tubes in your lungs where oxygen enters the blood and carbon dioxide leaves the blood.

Pulmonary **ventilation** is another term for breathing. It is the process of air flowing into the lungs while inhaling and out of the lungs while exhaling.



# Lung Diseases and Conditions

## Lung Diseases and Conditions

- Asthma
- COPD
- Cystic fibrosis
- Pulmonary fibrosis
- Sarcoidosis
- Bronchiectasis

**Asthma** is a long-term condition that causes the airways to narrow at times from certain triggers that cause inflammation.

**Chronic obstructive pulmonary disease (COPD)** is a lung disease in which less air flows in and out of the airways. This makes breathing difficult. The term “COPD” includes 2 main conditions: emphysema and chronic bronchitis.

**Cystic fibrosis** is a disease that affects the lungs and other organs. It causes a buildup of mucus, which can lead to blockages of mucus, infections, and damage in the lungs, making it harder to breathe.

**Pulmonary fibrosis** is a disease in which the tissue in the lungs becomes thick and stiff. Over time, this can cause permanent scarring (fibrosis) in the lungs, making it more difficult to breathe.

**Sarcoidosis** is a disease that develops when groups of cells in your immune system lump together to form red and swollen collections of cells called granulomas. Sarcoidosis can affect any organ, but most often affects the lungs and lymph nodes in the chest.

**Bronchiectasis** is a condition in which the airways become damaged, causing them to become loose and scarred. This makes it hard to clear mucus from the airways, which can lead to frequent serious lung infections.



## Lung Diseases and Conditions

- ARDS
- Pneumonia
- Pulmonary hypertension

**Acute respiratory distress syndrome (ARDS)** is a serious lung condition in which fluid builds up in the air sacs in the lungs. This prevents the lungs from properly filling with enough air to breathe normally. Over time, the lung tissue can become scarred and stiff, making it harder to breathe.

Air sac filled with fluid

**Pneumonia** is an infection in which the air sacs of one or both lungs fill up with fluid or pus, which interferes with breathing. Bacteria, viruses, or fungus may cause pneumonia.

**Pulmonary hypertension** is high blood pressure in the blood vessels leading from the heart to the lungs. This makes the right side of the heart pump harder against that pressure buildup within the blood vessels in the lungs. This can cause shortness of breath and low oxygen levels in the blood.

## Monitoring and Testing

A **lung volume test** measures how much air the lungs can hold. It is the most accurate way to measure the volume of air in the lungs.

**Fractional exhaled nitric oxide (FeNO) tests** determine how inflamed the airways are by measuring how much nitric oxide is in your breath. Nitric oxide levels are often higher with certain types of inflammation.

**Spirometry** is a breathing test that measures lung function by testing how fast and how much air you are able to breathe in and out.

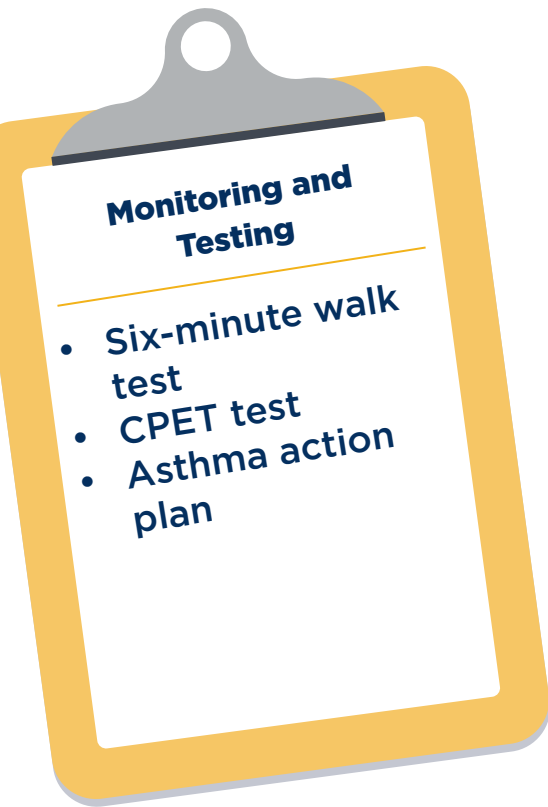
A **peak flow meter** is a small device that shows how well you blow air out of your lungs.

An **arterial blood gas (ABG) test** measures the amount of oxygen, carbon dioxide, and acidity in your blood. It is used to check for serious breathing problems or other health conditions.

## Monitoring and Testing

- Lung volume test
- FeNO test
- Spirometry
- Peak flow meter
- ABG test





The **six-minute walk test** is a way to measure your ability to exercise. You will walk as far as possible in six minutes. Your healthcare provider will measure your oxygen levels, heart rate, blood pressure, and the distance you walked. This test is commonly used for people with COPD or pulmonary hypertension.



A **cardiopulmonary exercise test (CPET)** is used to collect information about the body while at rest, and with increasing levels of exercise, to understand how the heart, lungs, and muscles are responding to exercise.

An **asthma action plan** is a worksheet you fill out with your healthcare provider to help you monitor asthma and treat changing symptoms or attacks. It serves as a guide for you and your family when you are well and when you are having symptoms or asthma attacks.

## Treatment Devices and Methods

A **nebulizer** is a machine that delivers a fine, steady mist of medicine through a mouthpiece or mask.

A **dry powder inhaler** contains pre-set doses of medicine in powder form. When you take a deep, fast breath in from the inhaler, the medicine is released into your airways.



A **metered-dose inhaler** contains a canister of medicine. When you press the inhaler, it sprays a pre-set amount of medicine through your mouth to your airways.

**Pulmonary rehabilitation** is a supervised medical program that helps people who have lung diseases like COPD live and breathe better. It involves exercises, breathing techniques, nutrition counseling, and mental health counseling.

**Oxygen therapy** is a treatment that delivers oxygen for you to breathe. You can receive oxygen therapy from tubes resting in your nose, a face mask, or a tube placed in your trachea (windpipe).

