

Chapter One: Know Your Lungs

To really understand COPD, you must first have a clear understanding of how the lungs work.

Breathing is often taken for granted until it becomes an effort to get air into and out of the lungs. It might be helpful if you understand how air travels through your respiratory system and where the trouble spots can be when you have COPD.

If you take a close look at where the air goes when you breathe in and out, you'll see that the path resembles a tree turned upside down. This is why your respiratory system is often referred to as the **bronchial tree**.

Each time you take a breath, air enters through your nose or mouth and continues down the **trachea**, better known as the windpipe. From there it goes into two sponge-like organs located in your chest called the **lungs**. Air enters the lungs through two large branches of the trachea known as **bronchi**. The air then travels deeper into the lungs through smaller bronchi and about a million miniature passageways called **bronchioles**. The walls of the bronchioles are surrounded by bands of smooth muscle, which provide support. At the end of this maze of little branches are tiny, stretchy air sacs, which are called **alveoli**. Each individual air sac is called an alveolus and is surrounded by microscopic blood vessels.

The oxygen in the air you breathe travels across the walls of the alveoli and into your blood so that cells throughout your body can use it. At the same time, carbon dioxide – a waste product – passes from the blood back into the air sacs and leaves the body by traveling back up the same path. This exchange of oxygen and carbon dioxide is very important because every cell in the body needs oxygen to function. It takes a constant supply of oxygen for your cells to live.

The process of moving air in and out of your lungs is called **respiration**. A strong wall of muscle located below your lungs, the **diaphragm**, is the major muscle of respiration. As the diaphragm moves down, it creates suction in the chest and draws in fresh air, which expands the lungs. Then, as this muscle relaxes, it returns to its original position and the air is pushed out of the lungs.

What went wrong?

If you have chronic bronchitis, airways in your lungs have become narrow and partly clogged with mucus. If you have emphysema, some of the air sacs deep in your lungs have been damaged. They cannot push out stale air and bring in oxygen to your bloodstream.

What are the symptoms?

Prolonged coughing with mucus, wheezing, and breathlessness.

How do I know which disease I have?

Your doctor may want to take some tests. Other illnesses can cause the same symptoms. Often, there is more than one cause. Many people have both chronic bronchitis and emphysema. Your doctor can diagnose your problem.

Will I get better?

There is no miracle drug for emphysema and chronic bronchitis. But you can take steps now to improve your breathing and feel better.

How do I start?

The first step to helping yourself is to see your doctor. If you're already under a doctor's care for chronic bronchitis or emphysema, use this booklet to help you follow through with your treatments and learn ways to feel and live better.

