Take a deep breath

The air that you have brought into to your lungs is about 78 percent nitrogen, 21 percent oxygen and has less than one percent of carbon dioxide and water vapor. This air passes through the mouth and nostrils where it is warmed and humidified.

This air then goes down and into the lungs, until it finally reaches very tiny sacs called alveoli. There are around 300 million of these small sacs in the average human, which make up a surface area that is about the same size as a tennis court. A tennis court-worth of lung space in your body!

To put that in comparison, you only have about six square feet of skin over your entire body. With every breath, you are moving air into these little sacks, and back out into the world around you at about 15 times each minute.

The air that comes in is rich in oxygen. The air that comes out has less oxygen and much more carbon dioxide. As the air goes into the lungs, the red blood cells pull out the oxygen they need to run the cells of the body. In the cells the oxygen is used and carbon dioxide is let out as the waste. The red blood cells then help to bring that carbon dioxide back to the lungs, where it is released into the lungs and breathed out.

Asthma limits breathing by limiting the flow of air into the lungs. In the normal lungs, the tubes that transport the air from the outside environment to the lungs are initially large and then they branch into smaller and smaller airways.

When a person has asthma, the cells in the airways become swollen, the walls become thicker and they make more mucous than normal. The airways are now smaller and more clogged with mucous, and this makes the pipes into the lungs smaller. Less air can pass to the lungs and breathing becomes much more difficult.

When a person has an asthma attack, not enough air gets in the lungs, and no matter how hard the person breaths they just cannot get enough air into their lungs.

 An asthma attack is triggered by things such as changes in the air temperature, smoke, dust, exercise or an infection. Different people have different triggers that cause them to have an attack and these triggers can come at any time, often when they are not expected.

Depending on how bad the asthma is, different treatments are used. During an attack, the person will use an inhaler, which delivers a low dose of steroids to the airways. This medication helps stop the overactive cells and make them less swollen. People with asthma may also need to take longer acting medications, which help to keep the body’s asthmatic response in check.

While nobody knows what causes asthma, there are a number of factors that have been associated with it. Asthma is becoming more common, and now one in four children in urban areas will have asthma. Researchers currently think the environment contributes to asthma—maybe since more sterile and clean environments cause the body to have a harder time dealing with asthma triggers.

An increased rate of asthma is found with higher use of antibiotics, in more hygienic, clean, developed countries and with an increased use of cleaning supplies. Factors such as air pollution and tobacco smoke have also been shown to cause an increased risk of asthma.