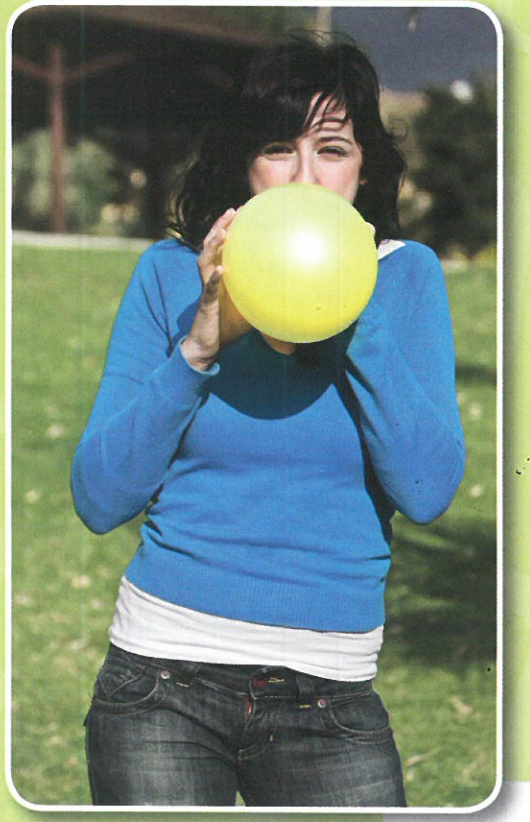
Drawing in oxygen

You breathe in order to pull oxygen into your lungs. But exactly how do you do that? And what happens to the oxygen once it reaches your lungs? Breathing in and out is possible because of the muscles in your ribs, called intercostals, and a large muscle below the lungs, called the diaphragm.



You use your breathing muscles, and muscles in your face, to blow up a balloon.

Breathing muscles

When you breathe in, the diaphragm contracts and flattens out. This pulls your lungs down and makes them bigger. Also, the intercostals pull your ribs outwards, making your lungs stretch out. These actions lower the air pressure inside your lungs, and this draws in air from the outside.

When you breathe out, the intercostals and the diaphragm relax. This lets your lungs spring back to their normal smaller size, and so air is pushed out.

At rest, up to 10 litres (21 pints) of air moves in and out of your lungs every minute. This rises to around 200 litres (425 pints) during hard exercise.

Total lung capacity

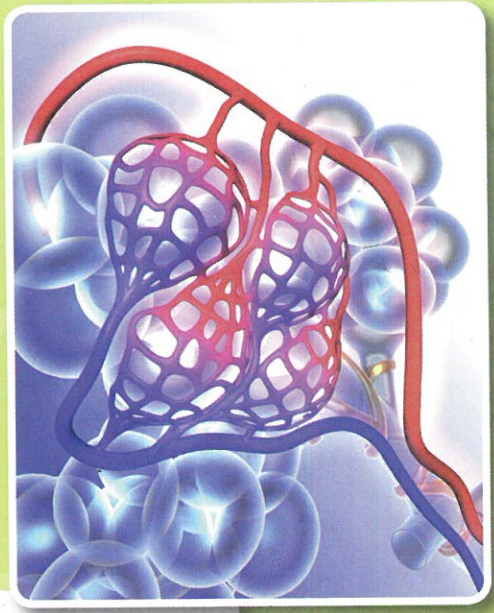
The total capacity of your lungs is the maximum amount of air you can hold in your lungs. For an adult, the average is 5.8 litres (12.3 pints). A blue whale, the largest animal on Earth, has a lung capacity of 5,000 litres (1,320 gallons)! A horse has a lung capacity of 55 litres (15 gallons).

A little mouse has a total lung capacity of only 1 millilitre (0.03 ounce).

Spongy lungs

In your lungs, the smallest bronchioles are thinner than a human hair. At the ends are **alveoli**, which are like tiny air bubbles in a sponge. The smallest ones are only about 0.025 millimetre (0.001 inch) in diameter.

Each lung has around 300–400 million alveoli, making a huge surface area inside the lungs. If you spread out all the alveoli, the area would cover roughly half the size of a tennis court.



The alveoli are where the oxygen in the air you breathe meets your blood.