

# Respiratory System

## Respiration

Air enters the body as a result of the same principle that ensures that gases are exchanged in the alveoli - diffusion; when there is an imbalance of pressure, the gas will move from an area of higher pressure to an area of lower pressure until the pressure is equalised.

- Inspiration occurs when the pressure outside of the body is higher than that in the lungs
- Expiration occurs when the pressure in the lungs is higher than that outside of the body

Unlike the exchange of gas in the alveoli, however, it is the chest muscles that cause these differences in pressure and thus breathing to occur. The main muscle involved in this process is the diaphragm.

## Diaphragm

The diaphragm is a central sheet of tendon with muscular fibres at the edges positioned between the chest and the abdomen.

- During inspiration, the diaphragm contracts and flattens, increasing the volume of the chest cavity
- During expiration, the diaphragm relaxes and re-forms a dome shape in the chest cavity reducing the volume

The diaphragm also aids in the expulsion of urine, defaecation and during child birth.

## Intercostal muscles

Situated between the ribs are the intercostal muscles. These contract during inspiration to pull the rib cage up and allow for the expansion in the chest cavity. Conversely, they relax when expiration occurs, allowing the rib cage to fall down and inwards.