

# Diaphragm

It is a thin musculotendinous structure that fills the inferior thoracic aperture. It separates the thoracic cavity from the abdominal cavity and it is dome-shaped.

## Positions

It is attached peripherally to:

- Xiphoid process
- Costal margins of the thoracic wall
- Ends of the 11th and 12th ribs
- Ligaments that go across posterior abdominal wall
- Vertebrae of Lumbar region

The pericardium is attached to the central tendon, where fibres converge.

## Structures through the Diaphragm

- **Aortic hiatus** - Aorta
- **Oesophageal hiatus** - oesophagus, vagus nerve, azygous and hemiazygous vein
- **IVC foramen** - Inferior Vena Cava through central tendon

## Innervation

### Motor innervation

- Phrenic nerve

### Sensory innervation

- Intercostal nerves (ribs 6-12)
- L1 and L2 roots
- Phrenic nerve

## Function

For inspiration and raising intra-abdominal pressure

## Mechanism of Breathing

### Inspiration

1. Intercostal muscles contract
2. Ribs elevate transversely and anteriorly
3. Diaphragm contracts and flattens
4. Thorax volume increases, decreasing pressure
5. Air goes in

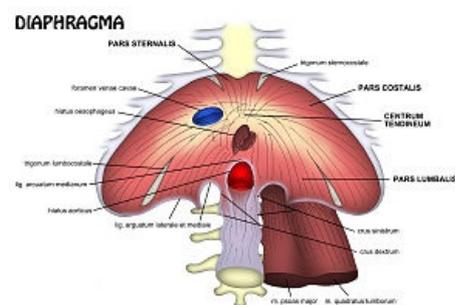
### Expiration

1. Intercostal muscles and diaphragm relax
2. Thorax volume decreases, increasing pressure
3. Air is forced out

## Links

## Bibliography

SNELL, Richard S. *Clinical Anatomy by Regions*. 8th Edition edition. 2004. ISBN 978-0-7817-6404-9.



Diaphragm scheme.