**Gas Exchange in Humans**

**![diag_1[1]]()**

* The thorax is an airtight chamber consisting of:

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-
-**

* Air passes through nostrils
* As air passes through air passages it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, odour detected
* Air passes through pharynx and into the \_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The wall of the trachea is strengthened and held open by \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ arranged \_\_\_ shaped bands of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of trachea during inspiration
* Lower end of trachea splits into 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is subdivided into many \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Form finer and finer tubes-end in alveolar ducts which lead into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Each alveolus consists of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:
* Epithelium consists of 2 types of cells:
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ – large, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells which make up alveolar wall
* Type II pneumocytes – secrete \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ a lipid/protein which \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and prevents the lungs collapsing
	+ Connective tissue – composed of collagen and elastin
	+ Capillaries – form a dense network around each alveolus
* Walls of the respiratory tract lined with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells and goblet cells which \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mucus \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Beating of the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ carries mucus and trapped particles to the back of the buccal cavity where it is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Mucus also moistens the incoming air

**Mechanism of Ventilation**

* Air is passed in and out of the lungs by movements of the \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ muscles
* Which alter the \_\_\_\_\_\_\_\_\_\_\_\_\_ of the thoracic cavity
* It is an \_\_\_\_\_\_\_\_\_\_\_\_\_ process

**Inspiration (breathing in)**

* \_\_\_\_\_\_\_\_\_\_\_\_\_ intercostal muscles contract
* \_\_\_\_\_\_\_\_\_\_\_\_\_ intercostals relax
* Rib cage pulled \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_
* Diaphragm \_\_\_\_\_\_\_\_\_\_\_\_\_
* Diaphragm \_\_\_\_\_\_\_\_\_\_\_\_\_
* \_\_\_\_\_\_\_\_\_\_\_\_\_ volume of thorax
* Pressure in \_\_\_\_\_\_\_\_\_\_\_\_\_ and therefore \_\_\_\_\_\_\_\_\_\_\_\_\_ (intrapulmonary pressure) is reduced to \_\_\_\_\_\_\_\_\_\_\_\_\_ than atmospheric pressure
* Air enters lungs, inflating alveoli, until air pressure in lungs (intrapulmonary pressure) is \_\_\_\_\_\_\_\_\_\_\_\_\_ to atmospheric pressure

**Expiration (breathing out)**

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ process brought about by \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_ of lung tissue, respiratory muscles and \_\_\_\_\_\_\_\_\_\_\_ of rib cage
* External intercostals \_\_\_\_\_\_\_\_\_\_\_ , internal intercostals \_\_\_\_\_\_\_\_\_\_\_
* Ribcage \_\_\_\_\_\_\_\_\_\_\_ mainly under own \_\_\_\_\_\_\_\_\_\_\_
* Diaphragm \_\_\_\_\_\_\_\_\_\_\_ ; dropping rib cage forces it into a \_\_\_\_\_\_\_\_\_\_\_ shape.
* It pushes \_\_\_\_\_\_\_ into thoracic cavity
* Reduces \_\_\_\_\_\_\_\_\_\_\_ of thorax, \_\_\_\_\_\_\_\_\_\_\_ intrapulmonary pressure \_\_\_\_\_\_\_\_\_\_\_ that of atmosphere
* Air is forced \_\_\_\_\_\_\_\_\_\_\_ by the \_\_\_\_\_\_\_\_\_\_\_ internal pressure

