

The parts of the alimentary canal are:

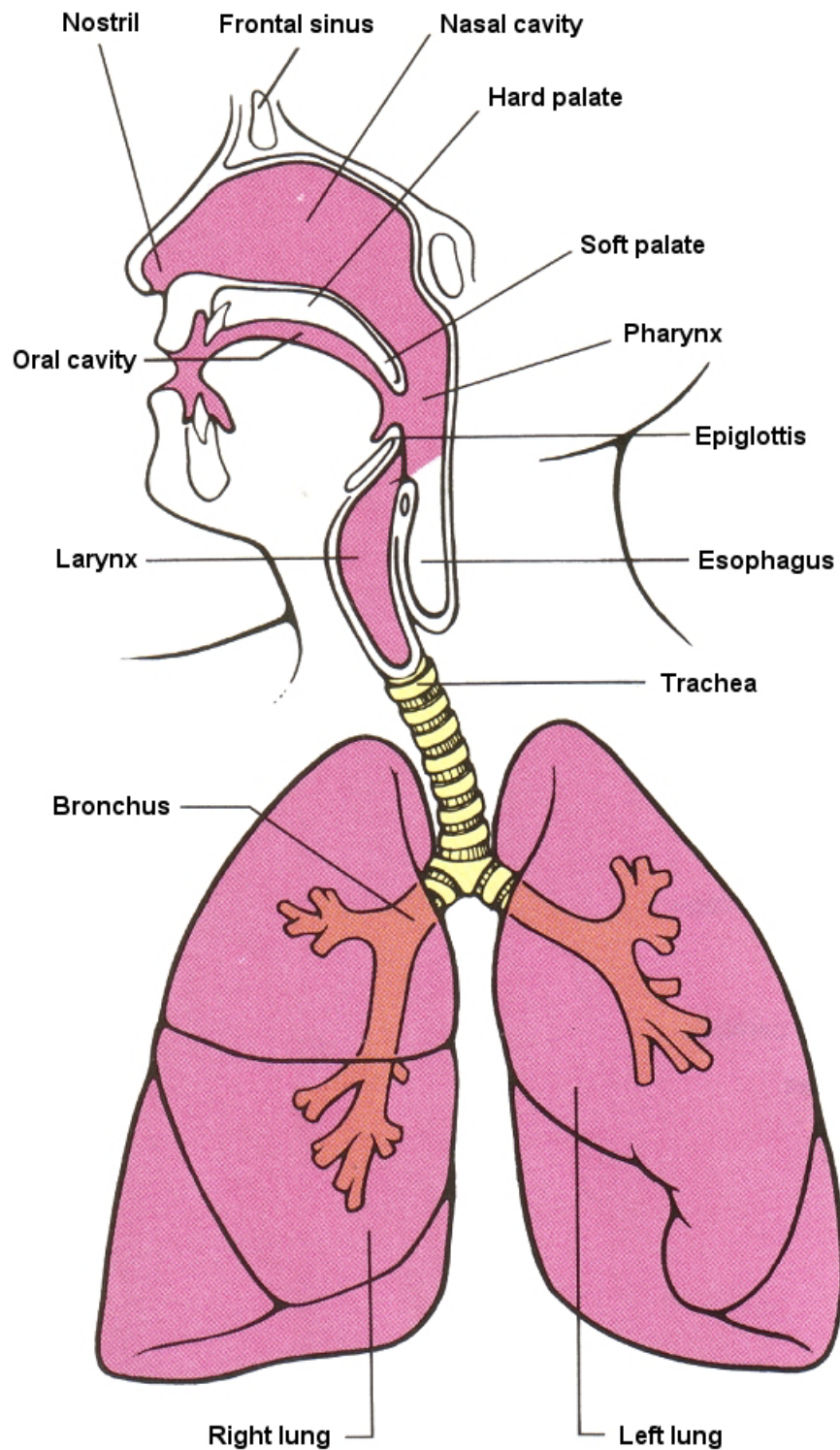
- The mouth
- The pharynx
- The oesophagus
- The stomach
- The small intestine
- The large intestine

THE RESPIRATORY SYSTEM

The respiratory system consists of **Air Passages** and **Lungs** .

The air passes through the following structures on its way to the lungs:

- Nose
- Pharynx
- Larynx
- Trachea
- Bronchi
- Bronchioles – *in the lungs*
- Alveoli – *in the lungs*



The nose consists of two parts:

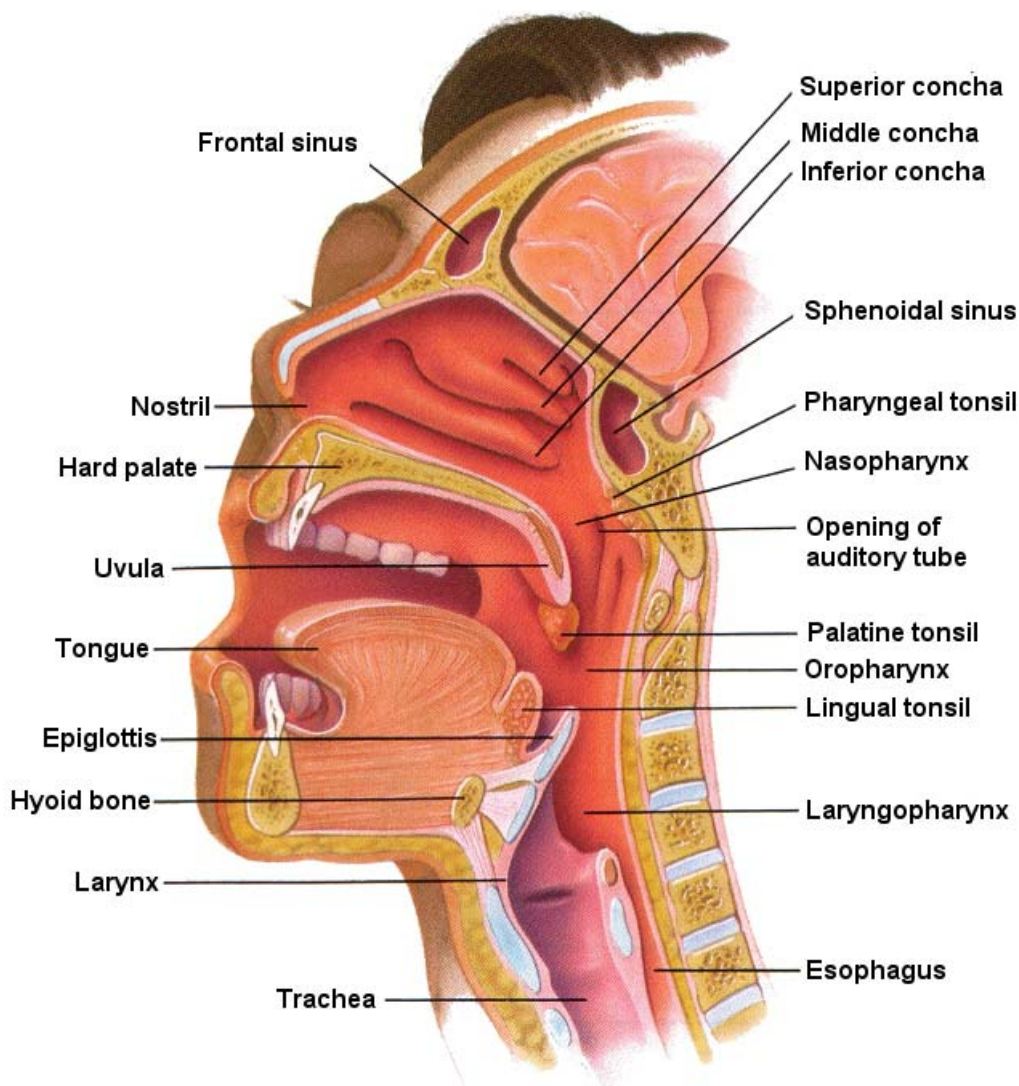
- The External Nose
- Nasal Cavities

The external nose is pyramidal in form and is made up of 2 nasal bones (the bridge) in the upper part and hyaline cartilage in its lower part.

The nostrils (anterior nares) are separated by a septum.

Lining the nostrils are small hairs (cilia) which act as a filter for dust in the inspired air.

The Nasal Cavities are lined by mucous membranes covered with ciliated columnar epithelium and are plentifully supplied with blood.



The Lungs are a pair of cone-shaped organs, each enveloped in a serous membrane (pleura). They are highly elastic, light, spongy and porous. They occupy most of the thoracic cavity. They are separated from each other by the mediastinum which contains the heart, great blood vessels, oesophagus and in the upper part, the trachea. Deep fissures divide the lungs into lobes. The right lung has three lobes, and the left lung has two.

MECHANISM OF RESPIRATION

Respiration can be divided into three parts:

- Inspiration
- Expiration
- Respiratory pause

During the **Respiratory Pause**, the accumulation of carbon dioxide (CO₂) in the arterial blood triggers off the respiratory centre in the medulla, which in turn sends a message to the muscles of respiration, i.e. the intercostal muscles and the diaphragm.

The amount of CO₂ in the arterial blood also controls the depth and rate of respiration.

Inspiration: The cavity of the thorax is enlarged by the upward and outward movements of the ribs, caused by the contraction of the intercostal muscles. The lungs in turn stretch because of their elasticity. Air then rushes in to fill the vacuum created. (Atmospheric pressure is greater than the pressure in the lungs.)

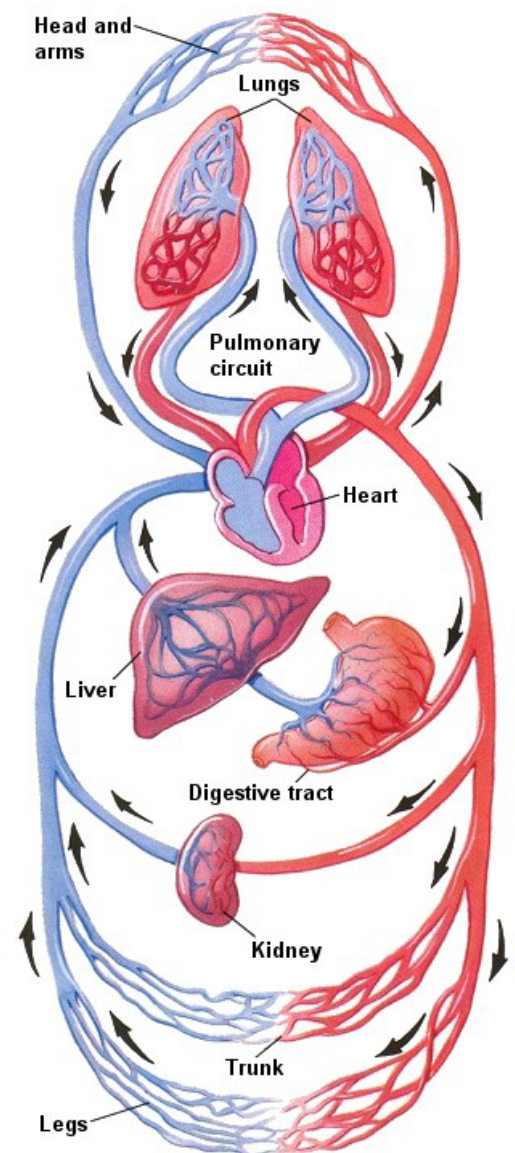
Expiration: the intercostal muscles and the diaphragm relax which exerts pressure on the lungs and the air is expelled.

Normal rate of respiration = 16 – 18 breaths per minute.

THE CIRCULATORY SYSTEM

This system carries oxygen and nourishment to the tissues and waste products away from it. It is the chief transport system of the body and consists of the following parts:

- Heart
- Blood
- Blood vessels – consisting of:
 - Arteries
 - Veins
 - Capillaries



Blood is made up of the following:

- Liquid 55%
 - Plasma and water 91%
 - Nutrients 9%

- Solids 45%
 - Red cells
 - White cells
 - Platelets

Functions of the blood:

- To carry oxygen to the tissues
- To remove waste products, e.g. carbon dioxide, urea and excess water
- To carry nutrients, hormones and vitamins
- To carry antibodies
- To carry phagocytes to aid in fighting infection

Blood Circulation

Blood is circulated around the body in three types of vessels:

Arteries – Large vessels which leave the heart, branching several times to become smaller and are then called arterioles. With further branching, the vessels become so small and are called capillaries. Arteries contain oxygenated blood.

Capillaries – The capillaries form a network within the tissues. They eventually join up and become venules and then veins.

Veins – These are the large vessels which return deoxygenated blood to the heart.

THE HEART

The main function of the heart is to pump blood all over the body. It is a hollow muscular organ which lies between the lungs and behind the sternum. It has four chamber, 2 called left and right atria and two called left and right ventricles.