

# **Chapter Fifteen**

## **Respiration, Excretion And The Sense Organs**

- Respiration occurs or takes place in two stages, and these are external respiration and internal respiration.

### **External respiration:**

- The breathing of human beings and animals is a form of respiration called external respiration.
- External respiration refers to the taking in of oxygen and the bringing out of carbon dioxide.
- This process is normally referred to as breathing.

### **Internal respiration:**

- It is the duty or the work of the blood stream, to carry oxygen to all the cells of the body.
- The body of a human being is made up of these cells.
- It is also the duty of the blood or the blood stream, to carry carbon dioxide from the cells to the lungs.
- Internal respiration occurs when the oxygen in the blood moves into or enters the cells.
- At the same time, carbon dioxide from these cells moves into the blood.
- The blood then carries the carbon dioxide to the lungs.
- The lungs then bring the carbon dioxide out of the body when we breathe out.

### **Respiratory system:**

- Respiration occurs in the respiratory system.
- In human being, the respiratory system can be found within the chest cavity.
- The main or important organs of respiration are the two lungs we have.

### **The breathing process:**

- Breathing is made up of two different acts and these are:
  - (a) Inspiration.
  - (2) Expiration.
- In order for breathing to occur, the chest muscles must act so as to cause the chest cavity to expand or contract.

### **Inspiration:**

- During inspiration, a person breathes air into his body.
- For this to occur, the chest cavity must expand or become bigger.
- The lungs also expand or become bigger.
- This causes air to move from the atmosphere into the lungs.

### **Expiration:**

- During expiration, a person breathes out air.
- For this to occur, the chest must contract or become smaller.
- This will also cause the lungs to contract, causing the air they contain to be brought out.

### **Excretion:**

- This is the process in which waste products are removed from the body.
- One of the main waste products removed from the body is carbon dioxide.
- This is produced during respiration and because it is harmful or dangerous to the body, it must be removed from the body.
- Other waste products produced by the body are mineral salts, urea and excess water which the body does not need.
- The organs which remove waste products from the body are called excretory organs.
- The excretory organs are the kidney, the lungs, the skin and the liver.
- The waste products removed from the body are called excretory products.

### **Kidney:**

- If there is too much mineral salts, water and urea in the body, then the kidney will remove some of them from the body.
- Blood containing water, oxygen, glucose, urea and mineral salts from the body enter the kidney.
- The oxygen within this blood is used by the cells of the kidney for respiration.
- Some of the glucose, mineral salts, urea and a large amount of the water is used by the kidney to produce urine.
- The urine is later brought out of the body and by so doing, urea, mineral salts, and excess water is brought out of the body.
- Excess water refers to the water, which the body does not need.

### **Skin:**

- The skin is said to be an excretory organ because it produces sweat which is an excretory product.
- The skin is made up of two main layers or parts, and these are:
  - (i) The outer layer called the epidermis.
  - (ii) The inner layer called the dermis.

### **The lungs:**

- Even though the lung is an organ of respiration, it is also an excretory organ.
- The lung is seen as an excretory organ, because it removes carbon dioxide which is an excretory product from the body.

## **The sense organs:**

- The sense organs are:

### **(1) The eyes:**

- Their function is that they are used for seeing.

### **(2) The ears:**

- They are used for hearing.

### **(3) The nose:**

- The function of the nose is that it is used for smelling.

### **(4) The tongue:**

- It's function is that it is used for tasting or to find the taste of items.

### **(5) The skin:**

- It's function is that it enables us to know when something touches the body, or when the body touches something.

## **Questions:**

(1) What is external respiration?

Ans:

- It refers to the taking in of oxygen and the bringing out of carbon dioxide.

(2) In which part of the body can we find the respiratory system?

Ans:

- Within the chest cavity.

(3) What do we mean by inspiration?

- It refers to the breathing of air into the body.

(4) What is excretion?

Ans:

- It is the process in which waste products are removed from the body.

(5) Why must waste products be removed from the body?

Ans:

- Because they are harmful or dangerous to the body.

(6) Name three excretory organs.

Ans:

- These are the kidney, the lungs and the skin.

(7) Explain why the lung is also an excretory organ.

Ans:

- Because it removes an excretory product called carbon dioxide from the body.