



## 8

## VARIOUS ORGANS OF OUR BODY

You have learnt about many organs of our body. Every organ of the body has a different function. But every organ functions make an organism healthy and keep specie alive.

Look at any construction site around you. You will find some garbage or waste material. This too happens with body. To throw such waste material out of human body we have excretion system.

When many people work together then a system is required for co-ordination. This too happens with body. Since many systems are working together, there can be no chaos. Therefore, a coordinating system is required. This function is done by nervous system and control system in our body. We will learn about excretion system and nervous system in this lesson.



### OBJECTIVES

After learning this lesson, you will be able to:

- Understand the importance of excretion system in human body.



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- Describe the function of excretion system of human body
- Tell the meaning of nervous system and
- Explain the functions of nervous system

## 8.1 EXCRETION SYSTEM

Every cell of our body keeps on doing something or the other. Therefore, some garbage is always found there. These elements are harmful and should not be collected in body. It should be thrown out of the human body. The process of throwing out harmful or waste material is called excretion and the groups of organs related to it are called excretion system.

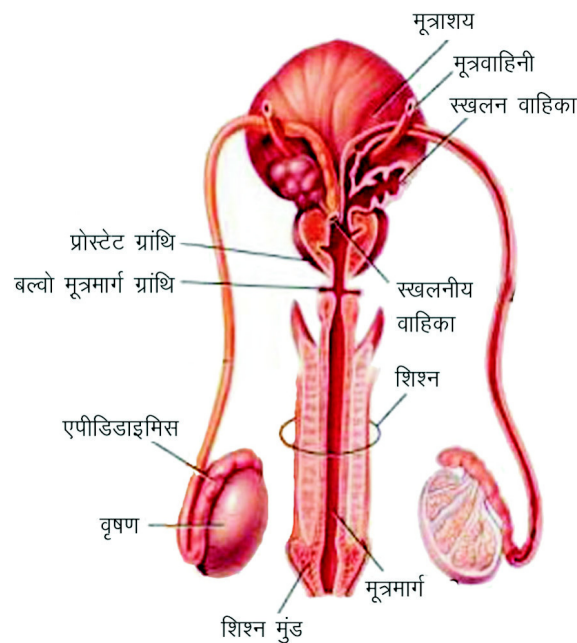


Fig. 8.1 excretion system

Our body excretes or excretion by three types:

1. lungs: we throw out polluted carbon dioxide produced during breathing.



2. skin: some mineral salts are bit required by our body are thrown out in form of sweating.
3. Urine: Our body comprises of water, a balance of water is required in human body. It should not be more or less. Urine takes out chemical wastes and extra water out of our body.

### **Urine system**

There are many parts of urine system:

1. kidney: these look like a pair of seed of beans shaped organs.

#### **Functions of kidney**

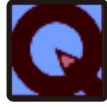
- i. To separate impurities of blood especially urea which reach kidney by artery
  - ii. To create a balance between water and Mineral salts in body
2. Urethra: there is a urethra from every kidney which reaches down bladder. Its functions is to take urine to bladder.
  3. Bladder: this is like a flexible bag. It is used to store urine temporary,
  4. Urine pipe: this is a pipe made up of small muscles to take out urine from the body time to time.

If one of our kidney stops working, then the other starts working double. If both kidneys get damaged then these can be



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transplanted by medicines. this is the reason why organ donation is promoted now a days.



## INTEXT QUESTIONS 8.1

1. What do you mean by excretion?
2. What are the three methods by which waste material comes out of human body?
3. Write the sequences of various parts of urine system?
4. How urine comes out of kidney and by which structure?
5. Which is the organ that stores urine temporary?

## 8.2 NERVOUS SYSTEMS

We must know whatever is happening around us what, why and how? How our food tastes - eatable or rotten, bad smell and non eatable? How do we know all these things? We see people, identify them, listen to their thoughts and speak our thoughts etc. All these co-ordinating activities are done by our brain and nerves which is called nervous system.

### 1. Parts of nervous system

Various organs of our body form nervous system, following are the parts of nervous system-



1. brain
2. Spinal cord
3. nerves
4. sensory organs

**1. brain** - human brain is a soft and delicate part. It is around 3 to 5 kg kilograms in an adult. This part is safe in skull.

Human brain is the biggest size in all living organisms. It has the only secret of how humans can do all other works that other organisms cannot do.

### Parts of brain

- i. Fore brain: this is the biggest part of brain. Its main function

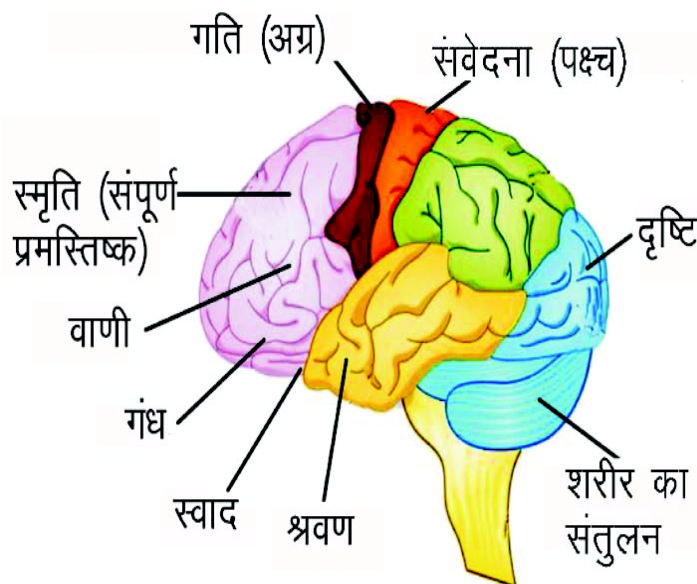


Fig. 8.2 parts of brain



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is to think and remember. This part is related to will power, intelligence and consciousness. It also gives us other areas related to knowledge centre like speaking, seeing, taste and smell.

- ii. Mid brain:: this s a small part found below fore brain and back side of skull. Its function is to control muscles.
- iii. Medulla oblongata - this is also known as pillar of brain. Its function is to control involuntary activities like heart rate and exhale breathing.

**2. Spinal cord** - this is a pipe like structure starting from brain and going to backbone internally in body. All message sent from brain to body reach by this pipe. This also helps in giving fast reaction like if a thorn pricks than we take our hand back internally.

**3. nerves-** nerves are small and slippery white structures which make messages form brain clear like electric current. All the nerves coming out of brain, skull and spinal cord are called spinal nerves

### Types of nerves

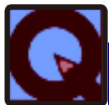
- i. Sensory nerves - these nerves take messages from sensory organs like eyes, nose, ears etc and sent them to brain.



- ii. Central nerves\_ these nerves come out from dynamic or moving organs like muscles relating to eyes and around eyes with brain,
- iii. Mixed nerves- These nerves are for both sending and receiving messages, there are 31 pairs of nerves coming out of spinal cord.

### **Functions of nervous system**

- i. These nerves control our reaction coming out of external nervous system world,
- ii. It also controls other system of the body.
- iii. It helps in the moving movements as we want like walking, doing movements etc.
- iv. This helps in proper functioning of all organs of the body.



### **INTEXT QUESTIONS 8.2**

1. What is the name of the system coordinating various activities of the body?
2. What are the four main parts of our nervous system?
3. Where is our brain situated?
4. What are the three main parts of human mind?
5. Which part is your brain controls your emotions?
6. Where is the centre for controlling heart beating located?



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### 8.3 OUR SENSORY ORGANS

Organs which tell us about the presence, element or taste of any objects are called sensory organs, we can see, listen or feel by these organs we have five sensory organs- eyes, ears, nose, tongue and skin.

1. eyes- eyes are essential to read and see objects around us. When a light ray comes to eyes from an object than nerves inside our eyes get stimulated and sends messages to brain. Brain reads the messages and draws a whole picture of the object.

We can see and understand many surrounding objects by this method.

2. Ear- these are spreading on face. They take sound waves inside the body. The sensory nerves inside ears get shook and hear news is sent as message to the brain, this also shows the balance of body which can be seen through ear.
3. Nose - nose helps in sending smell of various kinds and message to brains. We can identity many tasty foods by smell only.
4. Tongue- this helps un identifying taste of various types like sweet, sour, bitter, warm , hot salty etc.



5. Skin - this sensory organs tell us about pain, feel, arm- cold, hard-soft etc by toughing. Some of the areas of skin have high degrees of touch like fingers on head, hot-cold at some area like cheeks etc.



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### INTEXT QUESTIONS 8.3

1. List the sensory organs found in our body?
2. How does our eye identify an object?
3. How does tongue identify taste?
4. What is the other function of ear besides hearing?



### WHAT HAVE YOU LEARNT

- Taking out of harmful products produced by physical activity in body is called excretion.
- Lungs, skin and kidney help in excretion.
- Mainly excretion is done by urethra. There are two kidney in urine system, two ureter, bladder and urine pipe coming out of them.
- Nervous system tells us about outside world and coordinated with internal organs of the body.
- The main parts of nervous system are brain, spinal cord, nerves and sensory organs.



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- Brain is the centre of forebrain thinking, intelligence etc and midbrain controls the movement of muscles.
- Spine bone is fixed in back bone and is the medium of sending messages to the brain.
- There are three kinds of nerves namely, sensory nerves, motor nerves and mixed nerves.
- The five sensory organs are eyes, nose ear, tongue and skin.

**TERMINAL QUESTIONS****A. Multiple choice questions**

1. What is taking out of waste material made by cells during any physical activities in body called?
  - a. breathing
  - b. excretion
  - c. reproduction
  - d. secretion
2. What is the pipe from which urethra comes out called?
  - a. Urethra
  - b. Uretre
  - c. Uterus
4. Urine



3. Which organ filters blood?
  - a. heart
  - b. liver
  - c. kidney
  - d. Urethra
  
4. Which organs control breathing and heart beat?
  - a. mid brain
  - b. medulla oblongata
  - c. spinal cord
  - d. fore brain
  
5. Which part of brain is connected with intelligence?
  - a. fore brain
  - b. medulla oblongata
  - c. spinal cord
  - d. fore brain
  
6. How many kidneys are there in human body?
  - a. one
  - b. two
  - c. three
  - d. four



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B. Describe the following:

- a. excretion
- b. nerves
- c. sensory organs

C. State whether the following statements are true or false:

1. Keeping waste materials in our body is called excretion. ( )
2. Human urine system has one pair of kidney, one pair of bladder, one pair of Urethra and one ureter. ( )
3. Water and urea mainly comprise urine. ( )
4. If we are pricked by a thorn we pull our hand immediately, this message comes from brain. ( )
5. Skin is a sensory organ. ( )
6. Carbon dioxide comes out from sweating. ( )

D. Choose odd one out from the following:

1. Kidney, Urethra, lungs, ureter
2. Skin, lungs, kidney, liver

E. Answer the following questions briefly:

1. Explain three methods by which excretion takes place in human body?
2. What is the function of lungs in our body?



3. How urine is formed? What are the elements found in it?
4. What are the main parts of human brain? Explain their functions?
5. What is the difference between sensory and central system?
6. How does our eye help us to see?
7. What are the functions of our ears?



## **ANSWERS TO INTEXT QUESTIONS**

### **8.1**

1. taking out is waste material out of our body which is formed inside our body is excretion.
2. by lungs, by kidney, by urine
3. Kidney, Ureter, bladder , urethra
4. Urethra
5. Bladder

### **8.2**

1. Nervous system
2. Brain, spinal cord, nerves, sensory organs
3. Brain is safe inside the skull



4. Forebrain, spinal cord, nerves
5. Forebrain
6. Medulla oblongata

### 8.3

1. Eye, nose ear, tongue and skin,
2. Nerves coming out of eyes, sending messages to brain; the image of that object is formed and we are able to identify the object.
3. Sweet, sour, salty, warm, bitter
4. We get the knowledge of body balance form our ear.

