

# 01

## UNDERSTANDING OURSELVES

In this chapter, we will learn about:

- Introduction to human body
- Major body parts and their functions

Our body has various parts just like a machine (Figure 1.1). These parts are called organs. Organs work together to make our body work.



Figure 1.1: Car and its parts

Whenever we look into a mirror we see many of our organs (Figure 1.2) i.e. eyes, ears, nose, etc. These are called external organs. The organs present inside our body are called internal organs.

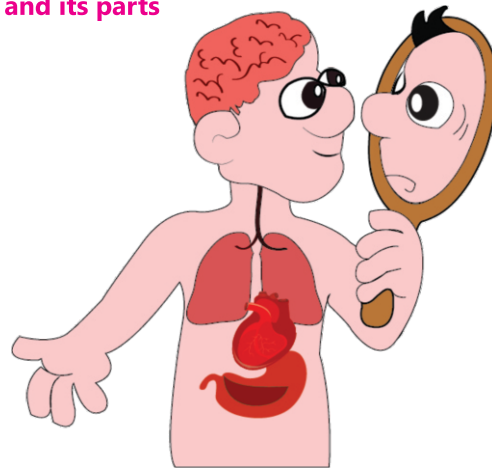


Figure 1.2: Parts of human body



### Activity 1.1

Name some internal organs of our body.

## MAJOR BODY PARTS AND THEIR FUNCTIONS

### EYES

The eyes make us see the world around us. We have a beautiful world around us which is full of colours such as green trees, blue sky, etc. Eyes are the only organs of our body which can see this beauty and make our lives colourful (Figure 1.3).



Figure 1.3: Human eyes

### EARS

At the end of the school when the bell rings we get happy and start packing our bags for home. Have you ever thought that which part of your body makes you hear this sound? These are the ears which receive the sounds from all around us and make us hear (Figure 1.4).



Figure 1.4: Human ear

### TEETH

Teeth are very important part of our body. We chew our food with the help of teeth (Figure 1.5).

Count the number of teeth in your mouth. How many are they?

We have two sets of teeth in our life time, one is milk teeth and the other is permanent teeth (Figure 1.6).



Figure 1.5: Human teeth

### MILK TEETH

This is the first set of teeth which starts appearing at the age of 6 months. At the age of 3 years we usually have 20 teeth. The milk teeth are not permanent and start falling at the age of 5 or 6 years.



Milk Teeth



Permanent Teeth

Figure 1.6



### Activity 1.2

Collect the following data from your friends:

Sr. No.	Name of Friend	Age in which first tooth fell
1		
2		
3		
4		
5		

### PERMANENT TEETH

Milk teeth start falling from 5 to 6 years of age. They are replaced by permanent teeth which are 32 in number.



### Activity 1.3

- See the picture carefully, and write what has happened to his teeth and why?

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### ? Do you know?

Every year in China, people celebrate a special day called "Love Your Teeth Day".

### BONES

Look at the Figure 1.7. It shows the bones which are present in our body.

Bones make up the structure of our bodies. We call this structure the **skeleton**. An adult skeleton is made up of 206 bones.

- The skeleton provides support to the body.
- Bones give shape to the body.
- The skeleton protects soft parts of our body. For



Figure 1.7

example, heart is protected by ribs. What protects our brain?

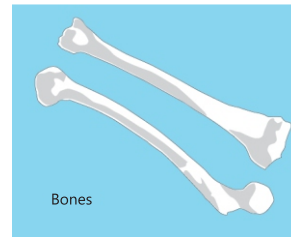


Figure 1.8: Leg bones

## JOINTS

The point where two bones meet is called a joint. Joints help in movement. Some joints are fixed and do not move. For example, the joints in our skull. Some joints move a little, like the joints in our spine. Some joints move a lot, like our elbows and knees (Figure 1.9).

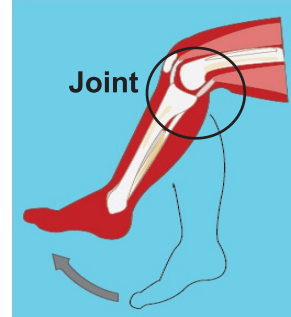


Figure 1.9: Knee joint



### Activity 1.4

Identify the joints in this picture by colouring them with different colours.



## MUSCLES

Muscles perform many functions in the body. Muscles help us in walking, running, lifting things, writing and many other actions (Figure 1.10).



Figure 1.10: Muscles help in running and lifting things

## MOVEMENT OF OUR BODY BY MUSCLES

Muscles can contract or relax. A bone is attached to the muscles for movement. Muscles can move a bone when they contract or relax. Muscles contract when they get message from the brain. For example, if you want to pick up your book, the brain will send a message to the muscles. On getting the message, the muscle contracts and pullup the bone attached (Figure 1.11). After doing this the muscle will relax, which means that it will return to its normal size. In this way you pick up your book or other things.

### ? Do you know?

There are more than 600 muscles in our body.

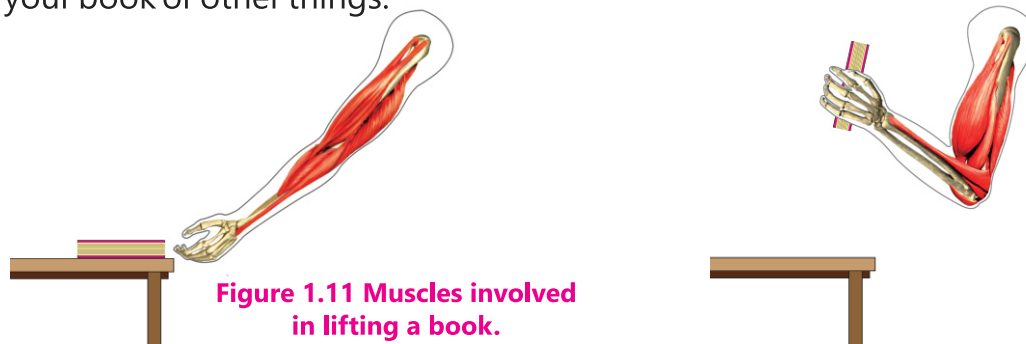


Figure 1.11 Muscles involved in lifting a book.

## BRAIN

Brain is the control centre of our body (Figure 1.12). The brain commands our muscles when to move. It makes us laugh and cry. It allows us to learn new things. It keeps on working even when we are asleep.

The brain receives different informations from organs such as eyes, ears and nose. The brain reads each message and decides how our body should respond.

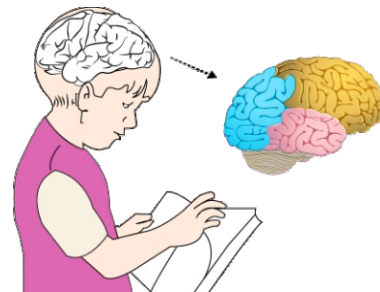


Figure 1.12: Brain

## HEART

Sometimes we get hurt and get a cut, blood flows out and we need a bandage to stop the bleeding. The blood in our body is continuously circulating. It is a need of our body. The flow of blood keeps us alive.

Heart is the organ which pumps the blood so that it circulates throughout our body (Figure 1.13).

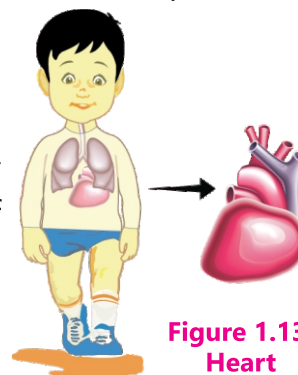


Figure 1.13: Heart

## STOMACH

Have you ever thought where the food you eat goes in the body? It is well chewed by the teeth and is pushed into the stomach (Figure 1.14). The stomach churns up the food. It breaks up the food into a sort of soup. Some of it is absorbed for body functions and the rest goes out as a waste.

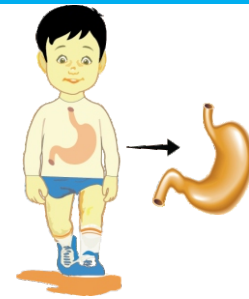


Figure 1.14: Stomach

## LUNGS

We have two lungs in the right and left side of our chest. The lung on left is a little smaller than the lung on the right because it has to make room for our heart to fit in our chest. These are the organs which help in breathing (Figure 1.15). Breathing means taking air in the lungs and sending it out. Lungs take oxygen from the air and send it to the whole body.

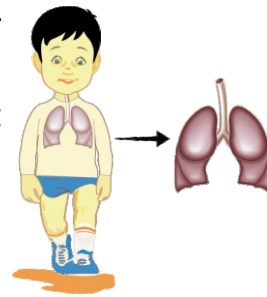


Figure 1.15: Lungs



### Activity 1.5

Take two balloons and two drinking straws and attach them as shown in the figure. Now fill air in the balloons using your mouth. These balloons now look like the lungs in our body.



## SKIN

It is an important organ of the body which performs many functions such as it covers the body altogether (Figure 1.16). It stops germs and dirt from getting into the body.



Figure 1.16: Skin of hand

## HEALTHY BODY

Eating healthy food and doing regular exercise make our body healthy.

These are the foods which you love to eat every day (Figure 1.17). But all these foods are not healthy foods.



Figure 1.17: Junk food or unhealthy food

Healthy foods are the ones which contain all those things which our body needs. This food helps in our growth and makes our body strong. Vegetables, rice, flour, pulses, fruits, meat and meat products, milk and milk products are healthy foods (Figure 1.18). Excess of everything is not good for health.



**Figure 1.18: Healthy food**

Unhealthy foods are the ones which are not good for our health. For example, if we eat pizza, it contains too much butter and cheese. If we eat chocolates and candies, they contain too much sugar (Figure 1.19). Eating too much of them can make our stomach upset and can harm our teeth. We can also become fat.



**Figure 1.19: Unhealthy food**

We should walk and play daily. It makes us strong and healthy (Figure 1.20). Without this, bones and muscles become weak, and are easily damaged.



**Figure 1.20: Playing and running make us strong and healthy**

A man sitting in a restaurant wants to have healthy food for his lunch. What should he order?

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

## MALARIA AND DENGUE FEVER

Malaria and dengue are the diseases which are spread by mosquitoes. Malaria is caused by microorganisms called Plasmodium. Plasmodium are transferred to human blood by the biting of *Anopheles* mosquito (Figure 1.21).



Figure 1.21 Biting action of *Anopheles* mosquito

## DENGUE FEVER AND ITS PREVENTION

You might have heard about viruses. Viruses are tiny living things that can only be seen with the help of a powerful microscope. Dengue fever is caused by a special type of virus. It is spread by *Aedes* mosquitoes which develop in the environment of standing clean water. *Aedes* mosquito, which spreads dengue fever, has black and white stripes on its body. This mosquito attacks from dawn to dusk.



Figure 1.22 Biting action of *Aedes* mosquito

Dengue virus is transferred to human body by the biting of *Aedes* mosquito. Biting action of *Aedes* mosquito is shown in Figure 1.22.

The presence of dengue virus in the body of a person can be known by the symptoms of the disease and the blood test.

## SYMPTOMS OF DENGUE FEVER

- Severe headache and vomiting.
- High fever and pain in the back and joints.
- Rash with red and black spots on body.
- Pain behind the eyes.



- Usually bleeding from nose and gums.

### **SAFETY PRECAUTIONS**

- Apply mosquito repellent lotion on your exposed body parts when you are going out.
- Sleep under mosquito net (Figure 1.23).
- Wear dress that covers maximum parts of your body (Figure 1.24).
- Keep doors and windows screened and closed especially in the morning and in the evening (Figure 1.25).



**Figure 1.23: Sleeping under mosquito net**



**Figure 1.24: Dress that covers maximum parts of the body**

If anyone in your family shows symptoms of dengue fever, immediately contact some doctor or a nearby hospital.



**Figure 1.25: Keep the doors closed**

## **REMEMBER**

- Dengue fever can be controlled by appropriate and timely preventive measures.
- Keep your home and street clean. Do not let stay in your surroundings.

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- *Aedes* mosquito usually lays eggs in clean standing water. So,
    - (a) keep storage tanks, pitchers, drums and animals' feeding pots covered.
    - (b) remove water from flower pots and fountains daily (Figure 1.26).
  - Use mosquito killing sprays, coils, mats etc. in your homes.



**Figure 1.26: Mosquitoes can be prevented from developing by keeping our homes clean, storage tanks covered and removing standing water from the flower pots**

## KEY POINTS

- Our body has different parts which are called organs.
- Eyes make us see things.
- Ears help us hear sounds.
- Teeth help in chewing food into small pieces.
- Bones make up the framework of our body.
- Bones and muscles help us moving.
- Brain controls all the functions of the body.
- Heart pumps blood to all parts of the body.
- Lungs are breathing organs. They help in the exchange of gases.
- Skin covers our body altogether.
- Dengue fever is caused by a special type of virus.
- Dengue is spread by *Aedes* mosquito.
- *Aedes* mosquito has white and black stripes on its body.
- Severe headache, high fever, pain in body, vomiting, bleeding from nose and gums are the symptoms of dengue fever.

# GLOSSARY

- Organ :** Part of the body which performs specific function.
- Skeleton :** Bones combine together to form skeleton.
- Joints:** The points where the bones meet.
- Muscle:** Muscles can contract and relax and cause movement.
- Healthy food:** Food which contains all those things which a body needs in proper amount.
- Unhealthy food:** Food in which amount of different things is not according to body requirement.

## EXERCISE

### 1.1 Fill in the blanks.

- (i) We see with our \_\_\_\_\_.
- (ii) Food is chewed by \_\_\_\_\_.
- (iii) Two bones meet at a \_\_\_\_\_.
- (iv) Heart pumps \_\_\_\_\_ to every part of the body.
- (v) Dengue fever is caused by a \_\_\_\_\_.
- (vi) Dengue fever is spread by \_\_\_\_\_.

### 1.2 Encircle the correct option.

- (i) The organ which is involved in body movements is:
  - a. bones
  - b. muscles
  - c. joints
  - d. all of these
- (ii) In their whole life, humans have sets of teeth:
  - a. 2
  - b. 3
  - c. 4
  - d. 5

(iii) The control centre of our body is:

- a. heart
- b. stomach
- c. brain
- d. skin

(iv) Which of the following organ pumps the blood in the body:

- a. heart
- b. stomach
- c. brain
- d. skin




(v) Unhealthy food is:

- a. vegetables
- b. fruits
- c. milk
- d. pizza

(vi) The dengue virus is spread by:

- a. air
- b. flies
- c. *Aedes* mosquito
- d. shaking hands

**1.3 Column A shows the organs of the body. Write their functions in column B**

Column A (Organ)	Column B (Function)
	
	
	

#### 1.4 Short Answer Questions

- (i) What is the role of bones in our body?
- (ii) Write the functions of brain.
- (iii) Differentiate between milk teeth and permanent teeth.
- (iv) Write any two ways of taking care of your skin.
- (v) What would happen if your body had no joints?
- (vi) How does dengue fever spread?
- (vii) State important preventive measures for dengue fever.

#### 1.5 Write briefly functions of brain, heart and lungs.

#### 1.6 How do bones and muscles help in the movement of body?

#### 1.7 Write the importance of healthy food. Why does the doctor advise us not to take unhealthy food?

### SCIENCE PROJECT

Identify and colour the different organs of the body.

#### Word Puzzle

Find words in the puzzle using word bank below:

**BRAIN, TEETH, LUNGS, STOMACH, HEART, EYE, EAR, HEALTHY**

A	R	H	S	O	N	H	G	L	K
R	E	E	T	P	U	S	H	A	A
H	R	A	F	R	L	G	R	H	N
E	O	R	A	E	D	U	Y	O	J
A	G	T	I	L	G	L	H	R	A
L	S	L	U	N	G	S	T	E	R
T	E	P	K	K	S	H	L	U	N
H	R	O	C	E	B	R	A	I	N
Y	F	N	G	J	D	A	E	Y	E
T	A	D	T	E	E	T	H	I	U
M	S	A	R	M	Q	I	C	S	I
Q	E	N	A	I	E	V	H	T	M
N	E	D	E	A	R	E	I	A	R
S	T	O	M	A	C	H	J	R	E

