

11. A Look inside the Body



Can you tell ?



- Why does the chest expand when we breathe in?
- The doctor puts her fingers on your wrist to feel your pulse. You, too, can feel your pulse. What causes this throbbing?



Internal Organs

We have many different tasks to do. We use certain specific parts of the body to do them.

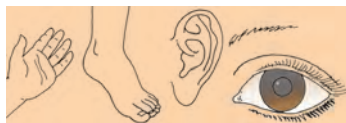


Can you recall ?

- Which parts of our body do we use for the following?
(1) Seeing (2) Walking (3) Hearing (4) Writing.
- What is meant by external organs? Give some examples.
- Which parts of the body are called sensory organs? Why are they called so?

A part of the body that is used to perform a certain function is called an organ. We use our legs to walk. Hence, our legs are our organs for walking. We use our ears for hearing. Hence, our ears are the organs for hearing.

Organs on the outside of our body are our external organs. Ears, nose, arms and legs are on the outside of our body. Hence, they are our external organs. They can be easily seen.



Some external organs

Organs that make us aware of the situation around us are called sensory organs. Eyes, ears, nose, tongue and skin are our sensory organs.

A new term !

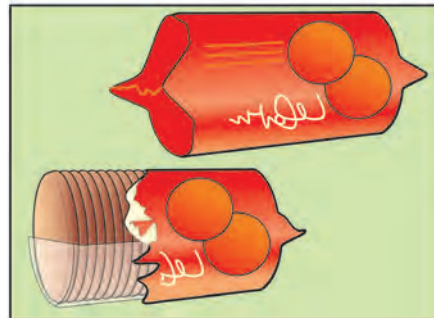
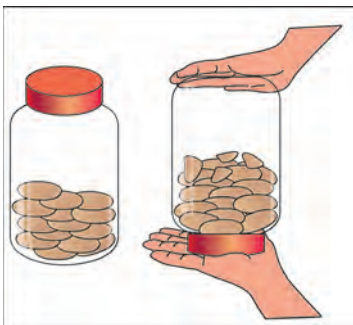
internal organ : an organ that is situated inside the body. It cannot be seen from the outside.

Many functions of the body go on inside the body. A network of blood vessels is spread throughout the body. Blood flows through them continuously. The air we breathe in is carried to all parts of the body through the blood. The food that we eat is digested. These functions are carried out by different organs called internal organs. Let us learn a few things about them.

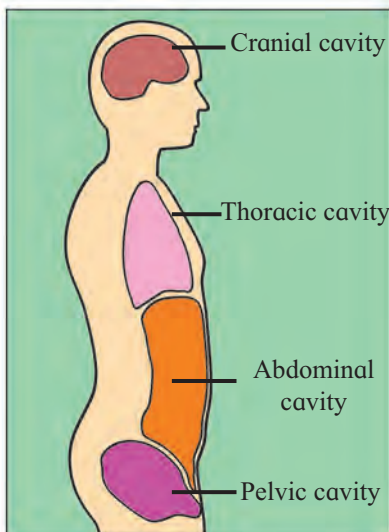
Special places for internal organs



Can you tell ?



- Some biscuits were put in a glass jar. The jar was then shaken and turned over. What happens to the biscuits?
- A pack of biscuits was shaken in the same way. What happens to the biscuits?
- The biscuits in the jar could break into pieces. But not the ones in the pack. Why?



The cavities in our body

The organs inside the body that perform certain important bodily functions need to be secure. The structure of our body is such that our internal organs can remain in their places no matter how much we move. There are hollow spaces for these organs inside the head and the torso. They are called cavities.

The cavity inside the head is called the **cranial cavity**.

The cavity in the torso has three parts. The cavity in the chest is called the **thoracic cavity**.

The cavity inside the abdomen has two parts. They are the **abdominal cavity** and the **pelvic cavity**.

All the internal organs of the body are situated in these cavities. They are situated in such a way that they will not leave their places and move here and there.

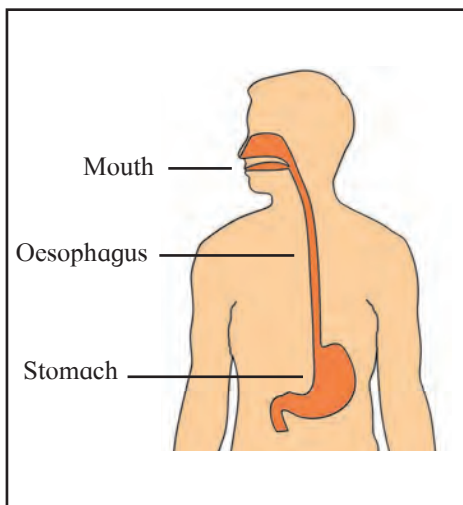


The oesophagus



Can you tell ?

- This man is filling the water from the tap into a drum. The drum is some distance away from the tap. Still, the water from the tap is flowing into the drum. Why is this so?



Oesophagus

The picture alongside shows two internal organs – the mouth and the stomach. These organs help in the digestion of food. The stomach is situated in the abdominal cavity. There is a tube in the thoracic cavity to transport food from the mouth to the stomach. It is called the oesophagus or the gullet.

We use our mouth to eat our food. The tongue tells us the taste of the food. We chew food with our teeth. As we chew it, our saliva mixes with the food. As a result, the food forms a moist ball. It is easy to swallow this soft ball. This food passes through the throat into the oesophagus. The wall of the oesophagus is flexible. This makes it possible to carry the food from the throat to the stomach easily.



Use your brain power !

- The organs which help digest our food are in the abdomen. Only the oesophagus is in the thoracic cavity. Why?
- How are the flexible walls of the oesophagus useful?



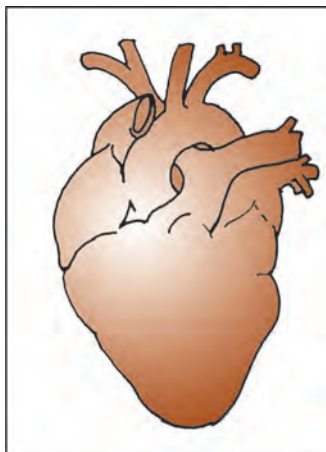
Do you know ?

- The journey of food in our body begins in the mouth. The internal organs in the abdomen help to digest it. The undigested, unwanted part is passed out through the anus in the form of faeces. That is where the journey ends.
- Food travels through a pipe-like pathway from the mouth to the anus. It is called the alimentary canal. It is about 9 metres long. It is made up of a number of internal organs.
- The oesophagus is a part of the alimentary canal.

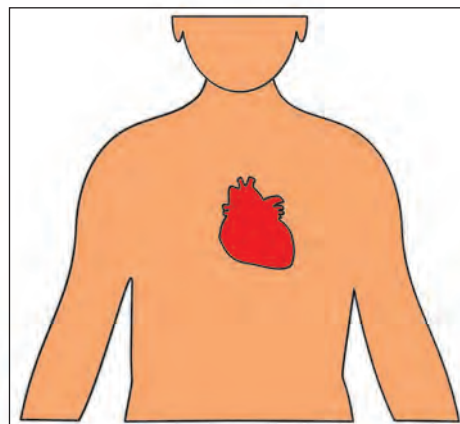
The heart

There is blood in our body. We take in air when we breathe in. Our blood carries the air to all parts of the body. The food that we eat gets digested. It is again blood that carries the digested part to every particle of the body. For these purposes, it is necessary to keep blood flowing through the blood vessels that spread throughout the body. It is the function of the heart to keep the blood flowing.

The heart is an important internal organ. It is in the centre of the thoracic cavity, a little to its left. It is slightly bigger than one's fist. The walls of the heart too are flexible.



The heart



The location of the heart

A new term!

The heart contracts : The heart becomes smaller.

The heart relaxes : The heart returns to its original size.



Try this.

- Take a bottle made from flexible plastic.
- Take a spent ball-pen refill.
- Make a small hole in the centre of the lid of the bottle. The refill must fit tightly in the hole.
- Now fill the bottle with water.
- Fit the lid with the refill tightly on the bottle. Make sure that most of the refill is inside the bottle and only a short tip projects outside. It will make it easier to do this experiment.
- Now hold the bottle upright in both hands. Press the bottle and then leave it loose. Do this three or four times.



What do you see?

- When the bottle is pressed, water flows out in a jet. When you let it go, water stops flowing out.

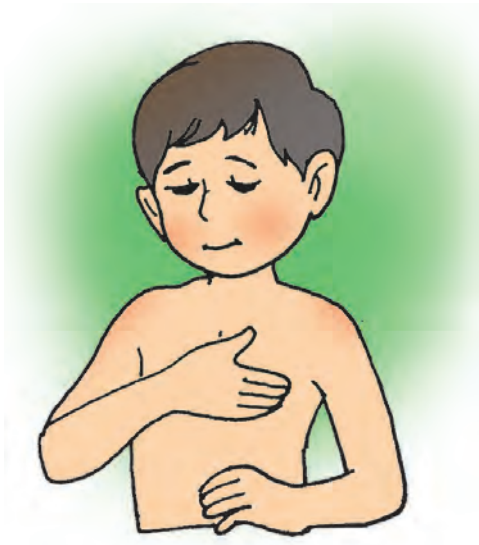
What does this tell you?

- If pressure is applied to a liquid in a closed space, the liquid will gush from wherever it finds a way out.



Try this.

Place your palm a little to the left of the centre of your chest. You can feel your own heartbeat.



The heart contracts and relaxes alternately without stopping. When it contracts the blood in the heart is pushed into the blood vessels. At every contraction, it is pushed further and further.

A contraction of the heart is called a 'heartbeat'. If you place your hand on the middle of the chest a little to the left, you can feel the throbbing of your heart due to the heartbeats.

At the wrist, there is a blood vessel that flows very close to the skin. If you place your fingers there, you can feel the heartbeats. This is called feeling the **pulse**.



Do you know ?

- When we are sleeping quietly, the pulse becomes slower.
- When we are running, the pulse becomes faster.

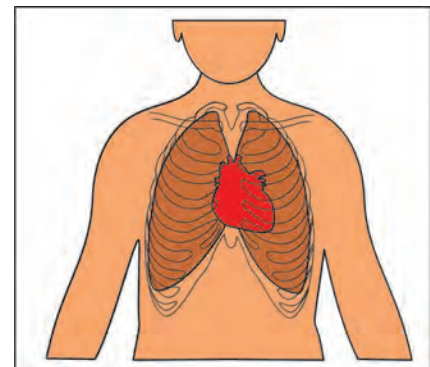


Use your brain power !

- When the heart contracts, the blood in the heart is pushed into the blood vessels. What could be the reason for that ?

Lungs

When we breathe in, we take air in through the nose. The internal organs through which this air is supplied to the body are called lungs. We have two lungs. They are situated in the thoracic cavity, one on the right and the other on the left. The heart is between the lungs a little to the left. There, the left lung has a slight depression. The right lung is slightly bigger than the left lung.



Lungs

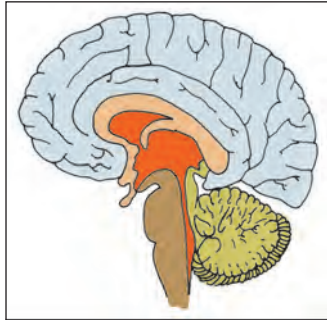
A pipe-like internal organ carries the air we breathe in into the lungs. It is called the windpipe. The windpipe separates into two branches. Each branch is called a bronchus. When we breathe in, the lungs expand a little. That is why our chest swells up when we breathe in.

The functions of the heart and the lungs depend on each other. Both these internal organs are very important. They are situated in the thoracic cavity, inside a cage made of bones called the ribcage. That is why, they are safe and secure.

The brain

The brain, situated in the cranial cavity, is a very important internal organ. It controls all that we do. It is in the brain that we become aware of emotions such as anger, joy, sorrow, etc. The meaning of the information collected by our sensory organs is also understood in the brain.

Injury to the brain can make one disabled for life. It can even cause death. Hence, the brain needs to be totally protected. That is the function of the shell or casing formed by the skull around it.



The brain



The brain in the cranial cavity



Do you know ?

- When we learn a poem, it is registered in the brain. That is why, we can remember it. This work of remembering is called memory.

The structure of our body is very complex. There are a large number of organs inside our body which help it to perform all its functions smoothly. It is very interesting to learn about all these organs. Do find out more about them as you grow up.



What we have learnt –

- The numerous important functions that go on inside our body are carried out by different organs. These organs are inside our body. They cannot be seen from the outside. They are called internal organs.
- The body is structured in such a way that the internal organs remain safe within the cavities inside the head and the torso.
- The oesophagus carries the swallowed food from the throat to the stomach. It is situated in the thoracic cavity.

- The heart keeps the blood flowing through the blood vessels spread throughout the body. The heart is continuously contracting and relaxing. The contractions of the heart push the blood from the heart into the blood vessels.
- The lungs are the organs through which the air we breathe in is supplied to the whole body. The right lung is a little bigger than the left lung.
- The heart and the lungs are held safely in the ribcage in the thoracic cavity.
- Our brain is a very important internal organ. It has a safe place inside the skull. Controlling movements, becoming aware of emotions and interpreting the information collected by the sensory organs are the functions of the brain.



Always remember –

In any accident, if the head is hit, the skull can get broken. If that happens it can cause injury to the brain. Then the person can become disabled for life or even die. That is why, one must always wear a helmet when riding a motorcycle or scooter.



Exercises

(A) Think and tell.

Why do we pant when we have been running hard for some time ?

(B) Answer the following questions.

1. What is meant by 'internal organ' ?
2. Name the two cavities in the abdomen.
3. Which important organs are situated in the ribcage in the thoracic cavity ?
4. Why does the chest swell when we breathe in ?
5. Why is the brain situated in the casing of the skull ?

(C) Fill in the blanks.

1. The internal organs that help digest food are
2. We havelungs.
3. Everyof the heart is called a heartbeat.

4. We becomeof all our emotions in the brain.
5. The structure of the human body is very

(D) True or false ?

1. The oesophagus is in the thoracic cavity.
2. The heart is a little bigger than our fist.
3. The food in the mouth forms a moist lump.
4. In the brain, we interpret the information collected by the sensory organs.

(E) Give reasons why.

1. The structure of the body is such that all internal organs remain secure in their places.
2. Blood must be kept flowing in the blood vessels throughout the body.
3. The brain has to be kept completely safe.

(F) Match the following :

'A' Group

Blood supply
Breathing
Carrying food to the stomach
Controlling movements

'B' Group

Alimentary canal
Heart
Brain
Lungs

Activity

- Using small plastic funnels and plastic tubes make a stethoscope like the one a doctor uses.

