

03

FOOD AND HEALTH

In this chapter, we will learn about:

- Sources of different food groups.
- Main groups of food.
- Hygiene and its basic principles.



Food is one of the basic needs of life. We need food in the same way a car needs fuel. It gives us energy. Our body needs energy not only to walk or exercise but also for all other activities such as growth and protection from diseases.

FOOD GROUPS AND SOURCES

We get food from plants and animals. Wheat, rice, vegetables and fruits come from plants. Fish, meat, eggs, milk and its products such as butter, yoghurt and cheese are obtained from animals.

The chemical substances which are needed by our body for various purposes are present in different foods (Figure 3.1). The major chemical components of food are listed below:

1. Carbohydrates
2. Proteins
3. Fats
4. Vitamins
5. Minerals
6. Water

CARBOHYDRATES

Carbohydrates are the most important source of energy for our body. These are the fuel that keeps our body working. It is also necessary for proper functioning of brain, heart, kidneys and nervous system. Most carbohydrates we eat come from plants (Figures 3.2, 3.3). Sugar is a carbohydrate found in fruits, honey, milk and table sugar. Foods such as wheat, rice, maize, barley, potatoes are rich in carbohydrates.



Figure 3.1: Different types of food



Figure 3.2: Carbohydrates from fruits



Figure 3.3: Wheat, rice, maize, potatoes are carbohydrate rich foods

? Do you know?

Whole grains, fruits and vegetables are healthy sources of carbohydrates whereas cookies, sodas, candies and sweets are not healthy sources of carbohydrates.

PROTEINS

Proteins are the building materials for our body parts, such as muscles, brain, blood, skin, hair and bones. They are also essential for growth and repair of damaged body parts.

Proteins are obtained both



Figure 3.4 Protein rich foods

from animal and plant foods. Meat, fish, eggs, milk and milk products are rich sources of animal proteins, while pulses, nuts, seeds, peas and beans are rich sources of plant proteins (Figure 3.4).

? Do you know?

Human hair is made of protein known as 'keratin' which is also found in fingernails.

FATS

Like carbohydrates, fats also provide us energy. They give more energy as compared to carbohydrates and proteins. These are stored under the skin to protect the body from temperature changes (Figure 3.5). Fats protect our major organs such as heart, kidneys and intestines from injury.



Figure 3.5: Thick layers of fat help polar bears against the effects of low temperatures

Fats are obtained from animals as well as plants (Figure 3.6). Animal sources of fats are ghee, butter, fats of meat, fish oil etc. Vegetable sources of fats are various vegetable oils such as olive oil, corn oil, coconut oil, mustard oil (sarsson), etc.



Figure 3.6: Foods rich in fats

? Do you know?

"Edible Oils" are the fats which are in liquid state at room temperature.

VITAMINS

Vitamins are needed in small amounts for the normal functioning of our body. They help in keeping our eyes, bones, teeth and gums healthy. Unlike carbohydrates, proteins and fats, vitamins do not provide energy, but help in



Figure 3.7: Sources of vitamins

regulating many functions of the body. Vitamins are also called protective foods because they are essential for fighting against certain diseases.

Vitamins are of different kinds such as vitamin A, B, C, D, E and K, each of which has a specific function in our body. Sources of vitamins are leafy green vegetables, fruits, meat, seafood, eggs, milk, etc (Figure 3.7).

MINERALS

Minerals perform many functions in our body such as formation of bones, teeth and blood cells. They also play an important role in our growth. Examples of minerals include calcium, iron, iodine, fluorine, phosphorus, potassium, zinc, sodium, etc. Minerals are found in green vegetables, fruits, milk, eggs, etc (Figure 3.8).



Figure 3.8: Sources of minerals

WATER

Although water does not give us energy, it is the most important component of food to maintain proper body functions. It is the main component of the blood, urine and sweat of our body. It helps to transporting substances inside our body and maintains body temperature through sweating. We should take eight to ten glasses of water daily. No one can live for more than a few days without water. Water is also obtained from foods such as watermelon, milk, juices, etc (Figure 3.9).



Figure 3.9: We get water from juices, milk etc.

BALANCED DIET AND ITS IMPORTANCE

We eat different types of food everyday. These may be wheat, rice, pulses, vegetables, fruits, meat, milk, curd, etc. which contain various nutrients (Figure 3.10). These nutrients provide energy to our body for performing different functions. As we have learnt that some food items are rich in proteins while others are rich in carbohydrates, fats, vitamins or minerals. So, it is necessary to select different food groups in proper amounts so that our body may get all the required nutrients to remain healthy and develop resistance to diseases. Nutrient requirement varies from person to person. It depends on age, gender and nature of work they do. A diet that contains proper amounts of all the necessary nutrients required for healthy growth and activity is known as '**Balanced Diet**'.



Fig. 3.10 Balanced diet

? Do you know?

Junk food rich in fats and deficient in other nutrients is unhealthy. Drinking too much soda is injurious to health as it causes dental cavities and reduces bone thickness.

UNBALANCED DIET AND ITS HARMS

An unbalanced diet is unhealthy as it usually lacks some nutrients and is not in the right quantities to ensure good health and satisfy body needs. An unbalanced diet may cause deficiency of some nutrients.

Deficiency of proteins affects the growth. Lack of vitamin A affects the vision. A deficiency of vitamin C leads to bleeding of gums (Figure 3.11 a). Without enough vitamin D, a person can develop weak and bent bones (Figure 3.11 b).



Figure 3.11(a): Bleeding gums



Figure 3.11(b): Child suffering from weak bones

FOOD PYRAMID

A food pyramid is a chart that helps us in choosing our daily food. It shows food which we should eat from each group everyday. The food pyramid helps people to select foods that supply all the nutrients they need. Foods that contain the same nutrients belong to a food group. The base of a pyramid shows what we should eat the maximum. As it goes up it shows what we should eat the minimum. Food pyramid is divided into six food groups as shown in Figure 3.12.

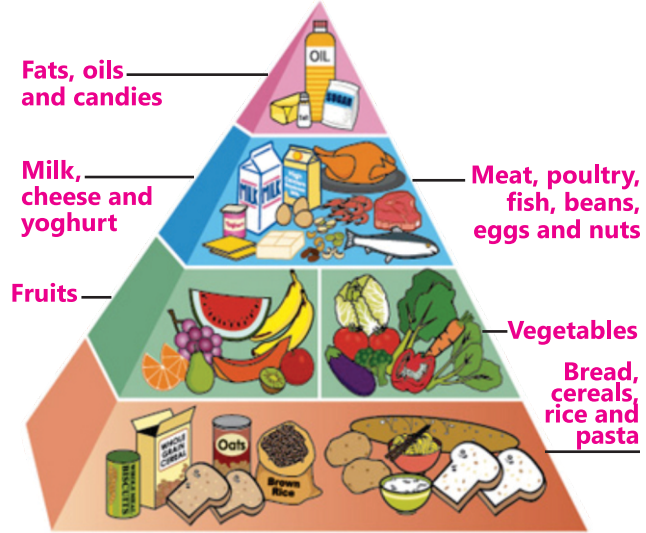


Figure 3.12: Food pyramid



Activity 3.1

You should record what you eat daily and categorize the foods into groups in order to monitor whether a balanced diet is being taken or not.

		Breakfast		Lunch		Dinner	
Sr. No.	Days	Food Taken	Food Groups	Food Taken	Food Groups	Food Taken	Food Groups
1.	Monday						
2.	Tuesday						
3.	Wednesday						
4.	Thursday						
5.	Friday						
6.	Saturday						
7.	Sunday						

Conclusion:



Activity 3.2

Recall what you have learnt about the food groups in this lesson. In the table shown below fill in three favourite foods for each group in a food pyramid.

Food group	My favourite foods
Fruits group	
Vegetables group	
Dairy group	
Fats, oils, sweets	
Meat, poultry, fish and beans group	
Bread, cereals, rice and pasta group	

PERSONAL HYGIENE

Personal hygiene may be described as the principle of maintaining cleanliness of the body parts like head, hair, ears, face, eyes, nose, neck, teeth, hands, feet and skin.

BASIC PRINCIPLES OF HYGIENE

Wash your hands: Wash your hands using clean water and soap before eating, after visiting toilet and after touching unclean objects so that you get rid of germs.



Take bath: Take a bath or shower every day to keep all parts of your body clean.



Brush your teeth: Brush your teeth twice a day, once in the morning and then before going to bed.



Brush your hair: Wash your hair often. Brush hair using a clean comb. Do not share comb with others.



Care of nose: Always keep your nose clean. Wipe the nose using soft cotton cloth. Do not put fingers or any object in your nose.



Care of ears: Always keep your ears clean. Remove wax from ears using cotton buds. Do not put anything in your ears like fingers, hairpins, etc. Clean your ears gently while bathing.



Care of eyes: Clean your eyes gently with water. Never read in dim light.



Care of feet: Keep your feet clean and wash them daily. Always wear shoes while going out.



Care of nails: Trim nails weekly. Keep nails short and clean. Do not bite your nails.



Wear clean clothes: Always wear clean, dry, neat, tidy and seasonal dress.



GLOSSARY

Balanced Diet: A diet that contains required amounts of all the necessary nutrients for healthy growth and activity.

Food: Food is the fuel for our body needed for energy, to help our body to grow, repair itself and keep warm.

Food Groups: Our food contains many substances that are necessary for our body. On the basis of their properties and functions foods are classified into the following groups: carbohydrates, proteins, fats, vitamins and minerals.

Food Pyramid: A food pyramid shows the proper amount, from each food group, that we should eat everyday to maintain a balanced diet.

Personal Hygiene: Personal hygiene involves proper caring of one's body by keeping it clean and healthy..

Nutrients: The ingredients of food that we need to grow and survive.

Nutrition: The process of taking in food and using it for growth, repair and maintenance of good health.

Unbalanced Diet: It is a diet that lacks some nutrients to ensure good health and satisfy body needs.

KEY POINTS

- Our body needs energy to do work and that energy comes from food.
- Food provides nutrients to our body.
- Nutrients are substances that provide energy and materials for growth, repair and development.
- Carbohydrates, proteins, fats, vitamins (A, B, C, D, E and K), minerals (calcium, iron, zinc, fluorine, iodine, etc.) and water are the main nutrients.
- Carbohydrates provide energy to our body.
- Proteins are needed for the growth and repair of our body.
- Fats also provide energy. They produce much more energy compared to the same amount of carbohydrates.
- Vitamins and minerals are needed in small amounts. They are essential for proper growth of body and for maintenance of good health.
- Food pyramid helps to select proper diet.
- Personal hygiene may be described as principle of maintaining cleanliness of the body parts.

EXERCISE

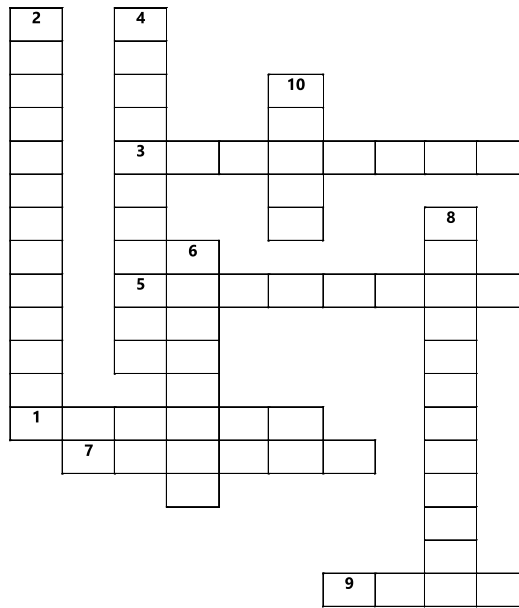
3.1 Complete the following sentences with suitable words.

- (i) Food gives us _____ for various activities.
- (ii) There are _____ food groups.
- (iii) Carbohydrates are the body's main source of _____.
- (iv) Proteins help us to _____ our body.
- (v) _____ do not provide energy to the body but are necessary for body functions.
- (vi) Fats protect our skin from _____.
- (vii) Fats that come from animal source are called _____ fats.
- (viii) Vitamins are substances present in _____ amounts in food.
- (ix) _____ is a chart that helps us to choosing daily food.

3.2 Encircle the correct option.

- (i) Which mineral helps in building of bones and teeth?
a. iron b. zinc c. calcium d. sodium
- (ii). What carries nutrients to all parts of the body and regulates the body temperature?
a. carbohydrates b. fats
c. water d. proteins
- (iii) The foods rich in carbohydrates are:
a. potato,wheat,sugarcane b. meat,fish,pulses
c. butter,ghee,oil d. spinach,ginger,tomato
- (iv) The diet which contains right amount of nutrients is:
a. unbalanced diet b. unhealthy diet
c. delicious diet d. balanced diet
- (v) The nutrients that are needed in small amount by our body:
a. vitamins and minerals b. carbohydrates and fats
c. fats and proteins d. carbohydrates and minerals
- (vi) They help our body to grow:
a. vitamins b. proteins
c. minerals d. carbohydrates
- (vii) Which of the following is body building food?
a. spinach b. meat c. mango d. tomato
- (viii) Which of the following food items if eaten more can make us sick?
a. milk b. burger and cold drinks
c. fruits d. vegetables
- (ix) Iron is a :
a. vitamin b. mineral c. fat d. energy food
- (x) Which vitamin is important for strong bones?
a. vitamin A b. vitamin C
c. vitamin D d. vitamin E

3.3 Fill in the puzzle boxes with the correct words using the clues given below:



Across	Down
1 a mineral found in table salt.	2 important source of energy for our body.
3 needed for growth and repair.	4 a chart that helps us in choosing our food.
5 makes bones and teeth strong.	6 protect against the diseases.
7 food gives us.	8 contains proper amount of nutrients.
9 protect the body from temperature changes.	10 transport substances inside our body.

3.4 Match the food nutrients in column A with their functions in column B:

A (Nutrients)
Proteins
Carbohydrates
Vitamins
Water
Fats
Minerals

B (Functions)
give us energy for daily activity.
protect our major organs.
are the building material for body parts.
needed for strong bones and teeth.
help our body to stay healthy.
helps to take nutrients to all parts of the body.

3.5. Short Answer Questions

- (i) Why do we need food?
- (ii) What are the basic food groups essential for good health?
- (iii) Give some examples of food from each of the food groups.
- (iv) Why are carbohydrates essential for us?
- (v) Name two specific functions and sources of proteins.
- (vi) Name two specific functions and sources of fats.
- (vii) What is the use of vitamins and minerals?
- (viii) How else can you get water in your diet besides drinking it?
- (ix) Name sources of vitamins and minerals.
- (x) What would happen to your body if you eat only from one food group?
- (xi) How can you get enough of all the nutrients in your diet?
- (xii) Why is it important to eat food from all the food groups?

Science Project

Make a chart of different food items used by your family during breakfast, lunch and dinner:

	Food Items	Balanced/Unbalanced
Breakfast		
Lunch		
Dinner		