

CONCEPT AND DEFINITION OF TERM

In this lesson, we are going to discuss about the following questions:

1. What is Food?

Ans: **Food** is that which nourishes the body. Only those substances which when eaten or drunk and absorbed by **the body produce energy, promote growth, repair tissues and regulate these processes** are foods.

Foods provide six types of **nutrients—proteins, carbohydrates, fats, vitamins, minerals and water**. In addition, the body also requires a continuous supply of **oxygen**. There are over 40 essential **nutrients**, which are supplied by the food we eat.

2. What is Food Science?

Ans: The study of **food** has been accepted as a distinct discipline and is known as **Food Science**. The study of **food science** involves understanding the **nature, composition and behaviour** of food materials under varying conditions of **storage, processing and use**. Thus, it helps us to find answers to questions such as what is food, what happens to it when it is **stored, processed, preserved, cooked** and what determines its acceptability.

3. Write the definition of Health.

Ans: The word **health** refers to the condition of the body. Good health indicates not only freedom from disease, but physical, mental and emotional fitness as well.

4. What is Nutrition?

Ans: The study of various **nutrients**, their **functions**, food **sources** and their **utilisation** by the human body and their effect on human wellbeing is called the science of **nutrition**.

5. What is Malnutrition?

Ans: **Malnutrition** means an undesirable kind of nutrition leading to ill health. The lack, excess or imbalance of nutrients in the diet may result in malnutrition. It includes both **under nutrition** and **over nutrition**.

6. Define the term PEM.

Ans: **Protein Energy Malnutrition (PEM)** is a deficiency disease caused in the infants due to '**Food Gap**' between the intake and requirement. It affects children under 5 mostly belonging to the poor underprivileged communities. **PEM** is particularly serious during the post-weaning stage and is often associated with infection. The term **PEM** covers a wide spectrum of clinical stages ranging from the severe forms like **kwashiorkor** and **marasmus** to the milder forms in which the main detectable manifestation is growth retardation.

7. Classify the food according to Food Groups.

Ans: A food group is a collection of foods that share similar nutritional properties or biological classifications. List of nutrition guides typically divide foods into food groups and Recommended Dietary Allowance recommend daily servings of each group for a healthy diet. The table shows the foods that include in the food groups.

Food Group	Main Nutrients
I. Cereals, Grains and Products : Rice, Wheat, Ragi, Bajra, Maize, Jowar, Barley, Rice flakes, Wheat flour.	Energy, protein, Invisible fat Vitamin – B ₁ , Vitamin – B ₂ , Folic Acid, Iron, Fibre.
II. Pulses and Legumes : Bengal gram, Black gram, Green gram, Red gram, Lentil (whole as well as dhals) Cowpea, Peas, Rajmah, Soyabans, Beans.	Energy, Protein, Invisible fat, Vitamin – B ₁ , Vitamin – B ₂ , Folic Acid, Calcium, Iron, Fibre.
III. Milk and Meat Products : Milk : Milk, Curd, Skimmed milk, Cheese Meat : Chicken, Liver, Fish, Egg, Meat.	Protein, Fat, Vitamin – B ₁₂ , Calcium. Protein, Fat, Vitamin – B ₂
IV. Fruits and Vegetables : Fruits : Mango, Guava, Tomato Ripe, Papaya, Orange, Sweet Lime, Watermelon. Vegetables (Green Leafy) : Amaranth, Spinach, Drumstick leaves, Coriander leaves, Mustard leaves, fenugreek leaves . Other Vegetables : Carrots, Brinjal, Ladies fingers, Capsicum, Beans, Onion, Drumstick, Cauliflower.	Carotenoids, Vitamin – C, Fibre. Invisible Fats, Carotenoids, Vitamin – B ₂ , Folic Acid, Calcium, Iron, Fibre. Carotenoids, Folic Acid, Calcium, Fibre

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V. Fats and Sugars :	
Fats : Butter, Ghee, Hydrogenated oils, Cooking oils like Groundnut, Mustard, Coconut.	Energy, Fat, Essential Fatty Acids
Sugars : Sugar, Jaggery	Energy

8. What is Food Pyramid?

Ans: A **Food Pyramid** is a guide stating the entire healthy food intake that our body requires regularly. **The Pyramid** is divided into groups or sections and recommends the intake of each group of food. This **food Pyramid** is extremely important for children as they need to know what food to eat everyday to help them in their growing years.

The **food pyramid** was first developed in **Sweden** in the year **1974**. It was in the year **1992** that the most widely used **food pyramid** was introduced by the **United States Department of Agriculture (USDA)**. It was later updated in **2005** and the name was changed to **My Pyramid** and then again worked upon in **2011** and was changed to **MY Plate**.



9. Write the functions of food.

Ans:

(1) The Physiological functions

- a. To provide energy
- b. To repair body tissues
- c. To build new cells and tissues
- d. To regulate body processes
- e. To protect against diseases.

(2) The social functions of food

(3) The psychological functions of food.

(1) The Physiological functions:

- ❖ **To build cells and tissues:** **Proteins, water and minerals build cells muscles and blood.** Protein sources are cereals and pulses. **Animal protein** comes from milk **products**, eggs, **fish** and **meat**. **Minerals** are found in **egg, meat, fish, green leafy vegetables etc.**
- ❖ **To repair cells and tissues:** Body tissues are continually broken down and replaced by new ones. Proteins, minerals and water is required to replace them.
- ❖ **To regulate body processes:** Essential fatty acids present in certain fats, proteins, minerals, vitamins and water all perform certain regulatory functions – coagulation of blood, maintenance of body temperature, activation of enzymes etc.
- ❖ **To protect the body from diseases:** Vitamins and minerals protect body from injury and diseases. They help in regulating growth, muscular co-ordination, eye sight, digestion and other body processes. These are present in green leafy vegetables, other vegetables, milk, meat, liver and eggs etc.

(2) The social functions of food:

Man is a social being food helps him to be social during special occasion like marriages, birthdays etc. **Food** is an important ingredient.

(3) The psychological functions of food:

- Food satisfies certain emotional needs.
- Food is used to express feelings of special attention, friendship, recognition or punishment etc.

10. What is Nutrients?

Ans: **Food** is that which nourishes the body. Only those substances which when eaten or drunk and absorbed by **the body produce energy, promote growth, repair tissues and regulate these processes are foods**. The chemical components of **food**, which perform these **functions**, are called **nutrients**. Some **foods** such as **milk and cereals** supply many nutrients while others such as sugar provide only one **nutrient**.

11. Write a short note on Nutrients.

Ans: **Nutrients** provided by food perform three basic functions in our bodies. **Nutrients** supply **energy**, provide materials for **growth** and **repair** of tissues, **control** and **regulate** the body processes.

The **foods** we use daily include, **rice, wheat, dal, vegetables, fruits, milk, eggs, fish, meat, sugar, butter, oils** etc. These different **foods** are made up of a number of chemical components called **nutrients**. **Nutrients** are classified according to their chemical composition: **Carbohydrates** are one of the three main classes of nutrients (**carbohydrates, fats and proteins**), which supply energy. Each gram of **carbohydrate** supplies **4.1 kilocalories** of energy to the body.

- **Carbohydrates** are formed in **plants** from **carbon dioxide** and **water** by **photosynthesis** using the energy of **sun**. Thus, solar energy is stored as chemical energy in the form of **carbohydrates** (starch, sugar) in the **plant**. **Carbohydrates** contain the elements **carbon, hydrogen and oxygen**. Starch is present mainly in **cereals, pulses, roots and tubers**. **Sugar** is found in **fruits, sugar cane and sugar beet**.
- **Oils and Fats** occur as components of **plant and animal foods**. These are composed of **glycerol and fatty acids**. **Fats and oils** contain **carbon, hydrogen and oxygen**. But the amount of **oxygen** present in these is much smaller than in **carbohydrates**. Each gram of oil or fat supplies **9.3 kilocalories** of energy. Thus, these are a concentrated source of energy. **Oils and fats** are extracted from **plants and animal** sources and are used in **food** preparation and service.
- **Proteins** are the third major nutrient present in **foods**. They are present in **plant and animal foods**. **Proteins** vary in their composition and size from one species to another. Thus, there are literally thousands, of proteins found in nature. All the **proteins** contain the elements **carbon, hydrogen, oxygen and nitrogen**. Thus, the

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presence of **nitrogen** distinguishes **proteins** from **carbohydrates** and **fats**. **Proteins** are made up of smaller compounds known as **amino acids**. Each gram of **proteins** supplies **4.1 kilocalories** of energy to the body.

- **Mineral** elements form an important group of **nutrients**. The term **minerals** refer to elements other than **carbon, hydrogen, oxygen and nitrogen**, which are present in **foods**. **Minerals** include those elements, which normally form salts and are converted to ash on exposure to high temperature (about 550°C). **Mineral** elements include **calcium, phosphorus, magnesium, sodium, chlorine, potassium, sulphur** and many others.
- **Vitamins** are organic compounds present in small amounts in **foods**, which must be provided to the body, to ensure normal growth and maintenance of the body. **Vitamins** include both **fat-soluble** ones such as **A, D, E and K** and **water-soluble, vitamin C (ascorbic acid) and thiamin, riboflavin, niacin** and others, which belong to the **B-complex** group.
- **Water** The importance of **water** as a **nutrient** has been recognized only recently. **Water** is an essential part of the body structure. It is a carrier of nutrients and regulator of a number of body functions. A major part of our need for water is met by the water we drink. A part of our need for **water** is met by the water in beverages such as **tea, coffee, fruit drinks** and **juices** and the **water** present in **food** preparations included in the meals. All individuals need the same nutrients for the same body function. The only variation is in the amounts of each nutrient required according to **age, size, activity** etc. **For example**, though all persons need energy for work, a man who carries loads may need more energy than a man who works at a desk job.

12. What is Nutritive value?

Ans: Nutritive value is an indication of the contribution of a food to the nutrient content of the **diet**. This value depends on the quantity of a food which is digested and absorbed and the amounts of the **essential nutrients (protein, fat, carbohydrate, minerals and vitamins)** which it contains.

13. What is meant by the term nutritional status?

Ans: Nutritional status is the condition of the body in those respects influenced by the **diet**; the levels of nutrients in the body and the ability of those levels to maintain normal metabolic integrity.

14. Write a short note on balanced diet?

Ans: A **diet** that contains all the essential nutrients like **carbohydrates, proteins, vitamins, fats, minerals, and water** in correct proportion is called a **Balanced Diet**.

Importance: Following are some of the important points about a **balanced diet**:

1. **Balanced Diet** leads to a good physical and a good mental health.
2. It helps in **proper growth** of the body.
3. Also, it **increases the capacity to work**
4. **Balanced diet** increases the ability to **fight or resist diseases**.

Components of a balanced diet

Some components of a balanced diet are as follows :

(i) ***Fats***

Some part of our energy requirement is fulfilled by **fats**. **Fats** can be found in fatty foods such as **butter, ghee, oil, cheese**, etc.

(ii) ***Proteins***

We need **proteins** for growth purposes and to repair the wear and tear of the body. **Protein** also helps in building muscle. It is found in dairy products, sprouts, meat, eggs, chicken, etc

(iii) ***Carbohydrates***

We need the **energy** to process and it is fulfilled by **carbohydrates**. **Carbs** provide us energy. Carbohydrates can be found in rice, wheat, chapati, bread, etc. Cereals are our staple food.

(iv) ***Minerals and Vitamins***

Vitamins, Minerals, and Fibre improve the body's resistance to disease. We mainly obtain it from vegetables and fruits. Deficiency diseases like **Anemia, Goitre**, etc can be caused due to lack of mineral in the body.