

## Unit 1 – Introduction to Nutrition

### 1. What is nutrition?

Ans - It is a dynamic process during which the food that is consumed is utilized by the body.

It is a science that interprets the interaction of nutrients and other substances in food in relation to the maintenance of growth, reproduction and health.

### 2. What is food?

Ans - Anything that we eat or drink and that can be absorbed by the body is food. It has to be used as a source of energy for body building and as a protective material.

### 3. What is the role of nutrition in maintaining health?

Ans – Nutrition maintains the health in the following respects:

#### 1. Promotes growth and development

Prevents

- Malnutrition during pregnancy
- Malnutrition during early childhood
- Malnutrition in school going children

Promotes proper growth in Adolescents

In adult life, nutrients help in the maintenance of good health of the body.

#### 2. Prevents Specific deficiency disorders

- Vitamin A – prevents night blindness
- Protein and calorie deficiency causes – Kwashiorkor and marasmus

#### 3. Provides resistance to infections by boosting up the immune system.

#### 4. Nutritional factors influencing specific diseases

- Some dietary patterns lead to certain diseases
- Example – diet rich in cholesterol and lack of physical activity can lead to cardiovascular problems

### 4. What are the major nutritional problems in India?

Ans – The main nutritional problems of India are:

- PEM
- Vitamin A deficiency disorder
- Nutritional anaemia
- Iodine deficiency disorder
- Low birth weight
- Endemic fluorosis
- Lathyrism

### 5. Discuss some points about PEM.

- Major health problem
- 43.8% moderate and 8.7% severe
- Protein–energy malnutrition (PEM) or protein–calorie malnutrition refers to a form of malnutrition which is defined as a range of pathological

conditions arising from coincident lack of protein and/or energy in varying proportions.

- Kwashiorkor and Marasmus are types of PEM
- Affects children of age group from 0-5 years

6. What are the causes of PEM in India?

Ans – The causes of PEM in India are as follows:

- Failure of breast feeding
- Late introduction of supplementary foods
- Inability to buy foods due to high cost
- Neglect of smaller children where mother has to do a lot of work
- Poverty, Illiteracy, less income, unemployment, customs, superstitions
- Environmental factors like infections

7. Discuss the methods of detection and prevention of PEM.

Ans – PEM can be detected through the following two techniques:

- Early detection when children are under-weight for their age. (growth chart)
- Arm circumference – Indicates about body's muscle mass (can be used after 5 years)

The steps for prevention are as follows:

- Promotion of breast feeding
- Introduction of low cost weaning foods
- Nutrition education
- Family planning and spacing between births
- Immunization
- Protein rich foods – Milk, eggs, fresh fruits
- Nutritional rehabilitation

8. Discuss some points about vitamin A deficiency.

Ans - It leads to complete blindness is left neglected.

The two problems caused by its deficiency are: Xerophthalmia and keratomalacia

Vitamin A is present in coloured fruits and vegetables like papaya, carrots, spinach, beef liver, Butter, eggs.

Primary causes of vitamin A deficiency are lack of awareness, poverty.

9. What are the symptoms of Vitamin A deficiency?

Ans - The symptoms are as follows:

- Night blindness – Rhodopsin fails to be formed
- Xerosis – dryness of the conjunctiva
- Dry skin
- Complete blindness

10. How is Vitamin A deficiency treated and prevented?

Ans - This deficiency is treated by injecting 1 Lakh IU of vitamin A intramuscularly.

Some of the preventive measures are:

- Mothers should be encouraged to take green leafy vegetables

- Smaller children should be fed with yellow fruits and vegetables like papaya, mango, carrot, pumpkin, etc.
- Mothers should be educated and encouraged to raise kitchen gardens when space is available

11. What is Nutritional anemia? How does it affect the people?

Ans - Nutritional anemia is caused by the lack of iron in the diet. It is higher in females and in infants. Normal haemoglobin levels are not maintained. It affects the working capacity of people. During pregnancy, it may lead to foetal mortality. (abortions, low birth weight, premature births).

12. What are the intervention steps adopted to cure Nutritional anemia?

Ans – The intervention steps are as follows:

- Iron and folic acid supplementation (through tablets)
- Government provides it to all pregnant and lactating mothers, free of cost.
- Food substances such as salt and atta (wheat flour) are fortified with iron.
- Iron can be naturally acquired through all green leafy vegetables.

13. What are Iodine deficiency disorders and how is it caused?

Ans - Iodine deficiency disorders are caused due to lack of iodine in diet. It is most prevalent in the sub Himalayan regions. It is more prevalent in the above said areas because iodine content is less in soil and water. It leads to goiter, that is, enlargement of thyroid glands on the front side of the neck.

14. What are the symptoms of Iodine deficiency disorders?

Ans- The symptoms are:

- Causes still births
- Infant mortality
- Abortions

It is controlled through iodization of salt and oil.

15. What is the cause of Endemic fluorosis?

Ans - It is caused by the excessive intake of fluorine. It causes mottling of teeth (loss of enamel giving a corroded appearance) and calcification of ligaments. It is common in adolescents, children and adults.

16. How is Endemic fluorosis prevented?

Ans – The preventive steps are:

- Changing the water source
- De-fluorinating the water in water treatment plants
- Fluoride toothpastes and fluorinated drinks should be avoided by these people

17. What causes Lathyrism? Where is it prevalent?

Ans - Lathyrism is caused by the consumption of Khesari / Kesari dhal. It causes paralysis of lower limbs, stiffness in knee joints, pain in ankle and knee joints. It is prevalent in Madhya Pradesh, Bihar, Orissa, Gujrat, Assam, Rajasthan etc. Khesari dhal contains a toxin called Beta Oxalyl amino alanine (BOAA). This dal is mixed with masoor dal and sold. It mainly affects young men.

18. How is Lathyrism prevented?

Ans – Preventive steps include:

- By daily administration of vitamin C
- The crop should be banned (but failed as it is widely grown in some parts)
- Removal of the toxin
- The dal can be soaked in hot water to remove the toxin.
- Then washed and dried in the sun
- Parboiling of dal

19. What are the goals of national nutrition policy?

Ans – The goals are:

- Reduction of incidence of low birth weight to 10%
- Elimination of nutritional blindness
- Reduction of incidence of anaemia to less than 25% in pregnancy
- Universal iodization of salt to lower Iodine deficiency disorder to less than 10%
- Establish special care for geriatric people
- Increase in annual food grain production 250 million tonnes
- To create household food security through proper poverty alleviation
- Decrease incidence of moderate and severe malnutrition in children
- Promotion of appropriate diet and Healthy lifestyle

20. What are the strategies adopted under National nutrition policy?

Ans - The strategies adopted under National nutrition policy can be categorized into 2 sections:

1. Direct nutrition interventions or short-term interventions
2. Indirect or long-term interventions

Direct nutrition interventions - The strategies under this category are:

- Expanding safety net
- Fortification of essential foods
- Popularization of low cost nutritious food
- Control of micronutrient deficiencies among vulnerable groups

Indirect policy instruments or long-term interventions - The strategies under this category are:

- Providing food security
- Improvement of food production

21. What are the steps taken for administration and monitoring monitor of national nutrition policy?

Ans – The steps are:

- Implementation of National nutrition policy - A committee is formed by the human resource development under the chairmanship of the secretary of the department of women and child development.
- National Nutrition Monitoring Bureau takes care of monitoring of nutritional situation.
- The state and local governments are also involved in providing information.

22. What are the factors that affect food and nutrition?

Ans – The factors are as mentioned below:

- Cultural factors
- Food fads
- Religious factors
- Traditional factors
- Geography
- Income
- Social value of food
- Food production and distribution
- Gender
- Development status
- Medication and therapy
- Health status
- Advertising
- Psychological factors

23. How are foods classified?

Ans- Foods are classified in three ways:

I. Classification based on types of nutrients – classified into macronutrients and micronutrients

- Macronutrients – carbohydrates, fats, proteins, water and fiber.
- Micronutrients – Vitamins and minerals

II. Classification based on predominant function – classified into:

- Energy yielding foods - carb, fats
- Body building foods - proteins
- Protective foods – vitamins and minerals

III. Classification by origin –classified into

- Animal origin
- Plant origin

24. What are the three different types of food standards?

Ans – They are:

- AGMARK standards
- PFA standards
- Bureau of Indian standards
- Indian standards of instituting

25. What is basal metabolic rate?

Ans – It is the amount of energy that is required to carry involuntary activities.