

UNIT 1: FOOD AND NUTRITION — AN

OVERVIEW

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1.0 Introduction

This unit is the first unit in the course HCM 106: Food and Nutrition. The unit introduces you to Food and Food Components, nutrition, Importance of Good Nutrition and Uses of Food. The content of this unit forms the basis upon which the other units on components of foods, digestion and metabolism of foods will be based.

2.0 Objectives

At the end of this unit, you should be able to

- Define Food
- Define Nutrition
- List the Components of Foods
- Give the Importance of Good Nutrients □ List the Uses of Foods.

3.0 Main Content

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3.1 Meanings of Food

Food has many meanings. For different people, food has different implications. It could be a source of joy, gladness, happiness to many children. To some adults, some foods are symbols of prosperity, pleasure and power. To some children, who are usually forced to eat, food is a source of sadness or rather a sign of sadness. In Nigeria and most African Countries, food is a symbol of friendliness and hospitality.

Foods, as meals, are eaten at certain times of the day. We then have breakfast, lunch and dinner to remove hunger at periodic intervals of the day. In between these meals, people still eat for pleasure.

Certain foods are usually associated with the meals of the day. Breads, eggs, yams, cereals, fruit juices, bacon and sausage are closely associated with breakfast. Pounded yam, Amala. Eba, Semovita, Egusi soup (melon soup), Okro soups, Rice, Beans Fried plantains are often more closely associated with lunch and dinner.

The reactions of people to some foods differ. Many Nigerian Children no matter what they eat will still want to eat cooked garri as part of their provisions to the boarding houses. Even when the children are told of the implication of consumption of garri to their sight, they still show a lot of preference for the consumption of this item. Many children scorn consumption of beans and readily jump at rice.

The types of food eaten by an individual can be affected by age, sex, religious beliefs and many factors depending on the culture of the people involved. Many children, as you learned in this unit, show preference for gan-i, rice, juices, milk, eggs and milk products. They show disdain for some cereals, beans and some foods requiring beluses. Many adults show a lot of preference for pounded yam, amala, eba, and revolt against rice. Elderly people sometimes prefer soft foods that can be easily chewed.

Some religions forbid the eating of certain foods. Eating of pork is forbidden by Islam. Eating of beef is forbidden by Hindus. Some cultures also forbid eating of certain foods. In my place of birth, eating of water yam and products from water yam is forbidden. In some families in Western part of Nigeria, the wives do not eat salt — table salt until many days after the birth of a child.

A culture defines which food is edible or not edible. For instance, grasshopper is eaten in some parts of South West of Nigeria whereas some

people from certain areas of the same South Western part of Nigeria find it difficult to touch grasshoppers.

In some areas of Nigeria, food can be used as a sort of punishment to children. You must have heard some mothers saying that their children would not eat except the children do certain type of work assigned for them.

Fleck (1976) wrote that from the day of birth, foods convey meanings and feelings related for security, protection, love and strength. Pounded yam with egusi soup gives feeling of 'home' to an Ekiti and an Ijesha man in Nigeria. To an Ijebu man in Nigeria, Ikokore — a food dish from water yam, brings him 'home'. To an Ibo man, the service of Apu — a fermented cassava dish, and kola nut makes him feel at 'home'. The service of hamburger and Ice Cream brings an American 'home'.

Some foods have social implications; they reflect the social status of the individuals consuming them. Some people even give more importance or attach more importance to the social implications of these foods than to the nutritive values of the foods.

Food is a basic need of a person. It is one of the physiological needs that are very basic to a person. The quantity and quality of the food that a person consumes must be adequate. When adequate quantity and quality of the foods are eaten, there will be:

- Vitality
- Good health
- Emotional stability
- Resistance against illnesses and diseases □ Enthusiasm for the challenges of life

When either the quantity or the quality of the foods is inadequate, there can be:

- Lack of stamina
 - Poor physical appearance
 - Tiredness
- Lack of enthusiasm
High susceptibility to illnesses and diseases.

Good nutrition makes a lot of difference in the appearance and nutritional well-being of an individual. Children in Nigeria today appear taller, bigger and more beautiful than their parents were at their ages — that is when the

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parents were at the ages of these children. This is due to improved nutrition of those children over those of their parents.

There is a need for us to distinguish between food and nutrition. Food conveys the nutrients necessary for well-being of an individual. Some foods that are eaten may not contain all these nutrients in the right quantity and quality for the well-being of an individual. This leads us to the terms:

- Well-fed
- Well-nourished

A well nourished person receives adequate quantity and quality of nutrients for good health. A well fed person receives adequate quantity and economic quality of food. The economic quality of food does not imply the nutritive quality of food. You should note that for good nutrition, all nutrients received by the body must be supplied in adequate quantity and proportions required by the body. The lack of a nutrient that is needed in a very minute amount may lead to a more serious health problem than the lack of a nutrient that is required in large amount. We will define nutrition later in this unit.

3.2 Food As Sources of Nutrients

"Give us our daily bread" is the prayer of every human being on a daily basis. Food is important to man because man must eat to live. Food consists of nutrient, derived from both animal and plant sources. The nutrients are mainly organic substances. These nutrients include:

- Water
- Carbohydrates
- Lipids — fats and oils
- Proteins
- Vitamins and minerals

The carbohydrates are manufactured in the plants through the process of photosynthesis. In this process the green living parts of the plants, Chlorophyll absorbs sunlight energy.

In the presence of this sunlight energy, water and carbon dioxide are converted to carbohydrates and oxygen.

Some other processes convert carbohydrates to lipids. Nitrifying bacteria introduce nitrogenous matters into the soil. The introduction of inorganic fertilizers also brings nitrogenous matters into the soil. From all these, proteins are manufactured.

Student Assessment Exercise 1.1

1.1.1 Discuss the various implications of Foods, showing clearly the meanings of Food.

3.3 Meanings of Nutrition

There are many definitions of nutrition. Some authors define it as the science of nourishing the body properly or as the analysis of the effect of food on the living organism. Yudekin (1969) defined it as the relationship between man and its food.

The Council of Foods and Nutrition of America Medical Association defined nutrition as the science of food, the nutrients and other substances therein, their action, interaction and balance in relation to health and disease and the processes by which the organism ingests, digests, absorbs, transports, utilizes and excretes food substances.

From all these definitions, nutrition is concerned with what happens to food from the mouth until the nutrients are absorbed and used and waste products finally excreted.

The changes that occur to the food in the mouth, stomach and intestines are important to the nutritionist. The absorption, transportation and utilization of the nutrients are also of concern to the nutritionists.

Also of concern to the nutritionist is what types of foods a person eats, why the person decides to choose the food he or she eats, the nutrients in the food and the nutritive values of the food in terms of supply of energy, promotion of growth, repair of body tissue and regulation of body processes are sources of concern to a nutritionist.

Nutrition has interrelationships with other fields such as chemistry, biochemistry, microbiology, physiology, medicine, and many other fields of human endeavor.

As you learned, the quality and quantity of the nutrients consumed is very important. On the bases of adequacy or inadequacy of the quantity and quality of nutrients consumed, there can be:

- malnutrition
- undernutrition
- overnutrition

Malnutrition is the word used for both excessive intakes of some nutrients. There are some problems associated with both excessive intake and inadequate intake of some nutrients. When there is inadequate intake of some nutrients resulting into some health problems, there is under nutrition. When excessive intakes of some health problems- like in the affluent countries, there is over nutrition. Both under nutrition and over nutrition are not good.

3.4 Importance of Good Nutrition

You have learned what malnutrition is. You have also learned the components of malnutrition — under nutrition and over nutrition. Malnutrition has associated costs.

In an attempt to estimate the cost of malnutrition, the United States Department of Agriculture once suggested that appropriate nutrition intervention activities can reduce morbidity and mortality from heart disease by 25%, from respiratory and infectious diseases by 20%, from cancer by 20% and from diabetes by 50%.

The enrichment of rice by the addition of thiamin has had remarkable influence in the reduction of incidence of beriberi. The well-being of children at birth including the weights of the children at birth has been attributable to the quality of the nutrition of the mothers during pregnancy. Mothers with good nutrition have been known to bear children judged to have good physical condition at birth.

The iodization of salt has reduced remarkably the incidence of simple goiter in some populations of the World. A program of enriching flour with thiamin, riboflavin, niacin, and iron as well as enriching margarine with vitamin A has resulted into reduction in incidence of rough, dry skin, cracks in the corner of the lips and soft bleeding gums. All these conditions have been found to be as a result of sub-optimal consumption of the nutrients mentioned above. The positive change in the stature of children generally in most Countries of the World has been seriously reformed due to improved nutrition of many population of the World.

Good nutrition in women has been found to have effect on complications during pregnancy with bad nutrition; results have shown reduction in these complications during pregnancy.

3.5 Uses of Foods

You have learned that foods are conveyors of nutrients. The nutrients in the food are water, carbohydrates, proteins, lipids, vitamins and minerals. All these nutrients have uses and functions to the body. Fleck (1976) wrote that the importance of adequate diet could be dramatized when one realizes that his eyes, blood, muscles, bones and teeth — every part of his body — were once food. This summarizes this importance of food and the nutrients therein.

Food provides nutrients for a good diet; the nutrients must be adequate both in quantity and quality. The quality of the diet depends on the amount of the essential nutrients in the food.

The major functions of the nutrients are to:

- Supply energy
- Promote growth and repair body tissues
- Regulate the body processes

Carbohydrates, fat and oils, protein, vitamins, minerals and water perform these functions. According to the classification by Fleck (1976) the following nutrients perform the function given below:

Source of Energy

- Carbohydrates
- Lipid
- Protein

Mineral elements*

Vitamins*

Growth and Maintenance of Tissues

- Protein
- Mineral elements

- Vitamins*
- Water*

Regulation of Body Processes

- Proteins
- Mineral elements
- Vitamins □ Water

The Nutrients that play indirect role, since they are necessary to catalyze the use of the three nutrients directly involved.

As you learned in this unit, the amount of the nutrients needed in the diet has no relationship with the importance of the nutrients. Some nutrients needed in minute proportions, may give serious health problems, if they are deficient in the body. It is important that the nutrients are taken in the right proportions. Deficiency of the nutrients may be caused by:

- Increased needs of the nutrient in the body
 - Decreased absorption of the nutrients and prolonged deficiency of protein calorie in children between the ages of 1 and 3 years can lead to kwashiorkor. This child may become pot-bellied, dull, and apathetic and may have Ophthalmic Xerosis. Lack of ascorbic acid in young children may lead to infantile scurvy with the child having swollen right thigh and hyper-pigmentation of skin.

The functions of some individual nutrients are influenced by the presence of some other nutrients. For instance the need for thiamin is said to be a function of the amount and kind of carbohydrate in the diet, the supply of Vitamin D affects the absorption of Calcium, indeed the absorption of calcium depends on the availability of Vitamin D. Vitamin E is reported to protect vitamin A. it has also been reported that the nature and amount of fat in the diet affect, the requirement for Vitamin E.

From all these, it can be deduced that any form of manipulation of any diet can lead to changes in the requirement for some nutrients.

Some non-nutritional factors such as use of drugs, exposure to environmental contaminations, physical, emotional and physiological stresses can influence the needs and the requirements of some nutrients. The various functions of the nutrients specific

to sonic nutrients will still be discussed when the major nutrients in foods are treated individually.

Student Self Assessment Exercise 2

1.2.1 What are the various uses of food?

1.2.2 What is nutrition? Of what importance is nutrition?

4.0 Conclusion

The unit treats the meanings of food and nutrition. It also discusses food as sources of nutrients, the importance of good nutrition and the uses of food in the body. Subsequent units will discuss on the important function of nutrients — energy and the various nutrients more extensively.

5.0 Summary

Food has been said to have various implications and to arouse some feelings such as 'feelings of joy, gladness, happiness, prosperity, pleasure and power. The unit gives that different people show different reaction to different foods. The preference for foods has been said to be influenced by age, religious beliefs, sex and cultural factors. Foods have been said to have social implications.

For food to contribute to the good health of an individual, the essential nutrients must be consumed in adequate quality and quantity to ensure vitality, pleasant appearance, emotional stability, resistance against diseases and high enthusiasm for the challenges of life.

The unit discusses food as consisting of water, protein, carbohydrates, lipids, vitamins and mineral salts. The unit discusses that for good well being of an individual, these nutrients must be present in adequate quantity and quality.

The unit gives nutrition as the science of food that deals with ingestion and digestion of food, absorption, transportation and utilization of nutrients by the body. The unit gives malnutrition as consisting of over nutrition and under nutrition.

The unit discusses the importance of good nutrition and functions of nutrients. The functions of nutrients are given as supply of energy, promotion of growth and repair of body tissues regulation of the body processes.

6.0 Tutor Marked Assignment

Discuss the various importance of good nutrition.

Answers to student Self Assessment Exercises

1.1.1 The answers are contained in section 3.1 of this unit.

1.2.1 The various uses of food are contained in section 3.5 of this unit 1.2.2 The various definition of nutrition is given in section 3.3 of this unit. The importance of nutrition is also given in section 3.4 of this unit.

7.0 References and Other Sources

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