

1. Details of Module and its structure

Module Detail	
Subject Name	Food, Nutrition for Healthy Living
Course Name	Food, Nutrition for Healthy Living
Module Name/Title	Food, Nutrition, Health And Hygiene – Interrelationships
Module Id	FNHL_10101
Pre-requisites	General knowledge about food, nutrition and hygiene
Objectives	After going through this lesson, the learners will be able to do the following : <ol style="list-style-type: none">1. Explain the terms - food, nutrition, health and hygiene.2. Identify the functions of food.3. Distinguish between the different dimensions of health.4. Interpret positive health and the health-sickness spectrum.5. Recognize the relationship between food, nutrition, health and hygiene.
Keywords	Food, nutrition, health, hygiene, sickness

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1. INTRODUCTION

You must have often been asked by your parents or elders to not just eat food, but to eat certain type of food and avoid some other type so that you could study well, and do your other work more efficiently. They must have also asked you to brush your teeth or take bath regularly, and always wash your hands before eating food. Have you ever wondered why they keep asking you to do that? It is because they do not want you to become ill and always remain healthy. In today's world, everybody is becoming concerned about food, nutrition and hygiene as they all want to live a long and healthy life. A lot of information about these aspects is available to individuals through different media. However, the information that people may be getting from varied sources may not always be correct or sometimes be interpreted incorrectly by them due to limited prior experience with these issues. If people adopt healthy lifestyle, good personal hygiene and correct eating practices, then they can be assured of robust health. So it is necessary that one understands the basics of food, nutrition, health and hygiene before applying these to their lives. In this module, you will learn about the concepts, dimensions, functions and interrelationships between food, nutrition, health and hygiene.

2. FOOD – DEFINITION AND FUNCTIONS

Food is basic to nutrition. Without eating food, you are unlikely to get adequate nutrition. Though most people realize that food affects their health and nourishment, they often choose food for pleasure. There are a number of foods available to you and the biggest challenge is to select those foods that would not only nourish your body but are also based on your food preferences. So let us first try to understand “What is food” and “What are its functions”.

Food is anything edible that is derived from plants or animals and includes solids, semisolids and liquids. When consumed, digested and assimilated in the body; it keeps it healthy, removes hunger, provides satisfaction and renews strength. But have you ever wondered what is it that is present in

the food that makes you healthy. The health promoting substances present in food are called nutrients. If the food that you consume does not contain nutrients in adequate amounts, you can suffer from various illnesses.

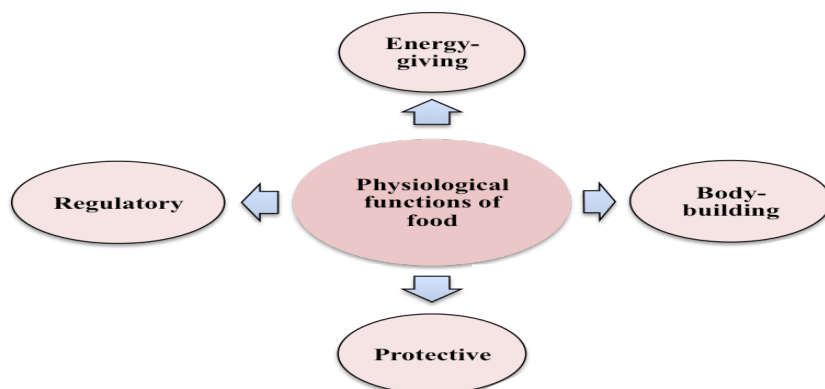
Food performs various functions in our body. It helps us to work, walk, run, socialize and feel secure. You must understand all these functions that food performs in order to understand how food affects nutrition. The functions of food can be classified into the following three categories.



Functions of Food

Let us see what each of these functions are:

I. Physiological functions: All nutrients have a specific function to perform in your body. This is known as their physiological role. As there are many nutrients present in food, the physiological roles performed by them also vary. On the basis of these roles, physiological functions of food can be further categorized as energy-giving, body- building, protective and regulatory.



Physiological Functions of Food

Energy-giving function: We all eat food to get energy. You must have observed that when you fast you feel very weak, but once you eat your food, you start feeling energetic again. Energy that you get from food helps you to perform your daily life activities like sitting, standing, walking, running, dancing, cooking, gardening etc. Moreover, even while you are asleep energy is used for functions such as respiration, digestion and absorption of food, excretion of waste products, blood circulation, maintenance of body temperature etc. These processes are known as involuntary processes and are important to keep us alive.

The major nutrients responsible for providing energy are carbohydrates and fats.

Body-building function: You all must be fond of seeing your baby pictures. If you compare your present self with those pictures, you will realize how much you have grown up. All this has happened because of the food that you consumed all these years. This is the body-building function of food. But food not only helps you grow by formation of new tissues, it also helps in repairing of worn out tissues. You must have seen this kind of repairing when you have a wound which gets healed in a few days.

Although all nutrients help in performing this function, the major nutrient that is responsible is Protein.

Protective function: When you are suffering from cold, you must have often been advised to take an orange/ or drink lemonade. That is because it contains vitamin C, a nutrient which helps you combat your cold. This is what is known as the protective function of food as it prevents infections by ensuring proper functioning of the body systems responsible for fighting infections and building up your immunity. The main nutrients responsible for performing this function are vitamins and minerals.

Regulatory function: Food which you eat helps in maintaining your heart rate and it also maintains your body temperature at 98.4°F besides regulating other vital processes of your body. This is done by certain specific nutrients like vitamins, minerals and water.

II. Social Functions: You must have often invited your friends and relatives for lunch or dinner during special occasions like your birthday or some festivals. And for these get-togethers, you must have made special efforts to cook or serve good food. That is because, by doing so, you express your friendship and respect for the people you invite home. Sharing food with other people implies social acceptance. You also tend to share your joy and happiness with other people. Food also helps in building social contacts as you meet different people during such parties and you can impress them with your cooking skills.

Food also has a religious significance. Certain food items like sweets, fruits, coconuts, *halwas* etc. are offered to deities in temples and are also eaten as *prasad*. Certain food items are rejected by some religious groups whereas the others may regularly use them in their meals. For example, some groups avoid using onions and garlic whereas others may use it in their food preparations. Food is an integral part of the social and religious life of people.

III. Psychological Functions: Food helps in meeting your emotional needs and gives you psychological satisfaction. Certain food items that you like give you a lot of happiness, they may even cheer you up if you are sad. Whereas if you are served food which you dislike, chances are

that you will get irritated and not enjoy your meal. Moreover, when you are feeling extremely happy or are depressed, you may indulge in overeating or not eat at all for a number of days. Also, if the food is cooked by a person you like, you tend to like the food even if it is not too good. You must have also noticed that there are certain food items which you would never eat if you are alone. But you tend to enjoy the same foods a lot if you are eating them with your friends. This happens as you feel that by doing so, you may earn the acceptance and liking of your friends, which is also a social function of food.

Food is also used as reward and punishment. Whenever a child does well in his exams, he is often offered treats comprising food like cold drinks, pizzas, burgers, ice creams etc. which he may not be otherwise allowed to have regularly. This helps in evoking pleasant feelings in the mind of the child and the child always associates these food items with pleasant memories. Similarly, withdrawal of certain food items may act as a punishment for the child. Also, food like *khichri* etc. which one usually eats when one is ill, are associated with unpleasant memories and are avoided when one is healthy.

3. MEANING OF NUTRITION

Now that you have learnt about the meaning and functions of food, let us try to understand the meaning of “Nutrition”. Nutrition in simple terms is the science of nourishing the body. It plays a significant role in your life, even before your birth, although you may not always be aware of it and it continues to affect you in major ways till you die, depending on the food you select. It can be defined as follows:

“Nutrition is the science of foods, the nutrients and other substances therein; their action, interaction and balance in relationship to health and diseases; the processes by which the organism ingests, digests, absorbs, transports and utilizes nutrients and disposes off their products. In addition, nutrition must be concerned with social, economic, cultural and psychological implications of food and eating.”

Nutrition is provided by the nutrients present in food. Nutrients can be defined as the chemical constituents of food that must be supplied to the body in suitable amounts. They perform specific functions in our body and are required in different amounts. The nutrients like carbohydrates, protein, fat and water are required by your body in greater amounts and are called macronutrients. Vitamins and minerals are micronutrients and required by your body in smaller amounts. Intake of nutrients in proper amounts helps in maintaining a proper nutritional status. If this is not done, malnutrition can occur.

Malnutrition refers to impairment of health resulting from deficiencies, excesses or imbalances in a person's intake of energy and/ or nutrients. It includes three broad groups of conditions: -

- Undernutrition, which includes underweight (low weight for age), stunting (low height for age), and wasting (low weight for height)
- Micronutrient-related malnutrition, which includes micronutrient deficiencies such as anaemia, rickets, pellagra, night blindness etc as well as micronutrient excesses such as vitamin A toxicity etc.
- Overweight, obesity and diet related non-communicable diseases such as heart disease, stroke, diabetes and some cancers.

How does food promote nutrition?

Food after ingestion is digested and absorbed in the body to provide it with the nutrients. The nutrients thus obtained, get absorbed in the blood and are transported to all parts of the body where they can perform their specific functions and promote nutrition. The substances in the food which are not absorbed by the body or are produced as byproducts of digestion and absorption are thrown out in the faeces and the urine.

4. HEALTH – DEFINITION AND DIMENSIONS

There is a very well known proverb – “Health is Wealth.” Health is supposed to be the most valuable asset that any human can possess. You must have often seen that when you are unwell, you cannot perform to your full potential and may fail to achieve your goals. But what is the meaning of ‘health’? Let us try to understand the meaning, dimensions and determinants of health.

Health lays the foundation to productive activity in life. It is an essential characteristic without which you cannot enjoy your leisure time and lead a happy family and social life. It is viewed differently by different people. You may consider health nothing more than not being sick but health for a wrestler may be to have bulging muscles and having the strength to defeat his opponents.

The oldest definition of health was “the absence of disease” and according to this, if someone was free from disease, he/she was considered healthy. This, however, was a narrow view about health and did not take into consideration the overall wellbeing of the individual.

Several definitions of health have been given from time to time but the World Health Organization (WHO) gives the most accepted definition of health. According to it, health is defined as “a state of complete physical, mental and social well being and not merely the absence of disease or infirmity.”

Some people define health as a condition under which an individual is able to mobilize his resources – intellectual, emotional and physical, for optimum living. It is considered as a quality of

life that enables the individual to live most and serve best. In recent years, the WHO definition of health has been modified to include “the ability to lead a socially and economically productive life”. Health of an individual is influenced by multiple factors, some of which could be present within the individual while some may be present in the external environment in which he or she lives. These internal and external factors of individuals interact with each other and may have consequences which are either health-promoting or deleterious. At any one time, ‘health’ is a result of interaction between hereditary, environmental and socioeconomic factors of an individual.

Whenever your body is not functioning properly and you suffer as a result, it is called disease. In other words, “disease” means absence or deviation from normal health. The disease can be physical like fever, body pain, injuries, sores; or mental like insanity, depression; or social like maladjustment in family life, at workplace or in the society. Diseases can also be classified as communicable and non-communicable. Communicable diseases are caused by microorganisms or worms or other parasites; are infectious and spread from a person suffering from the disease to healthy ones. Examples of communicable diseases are measles, diphtheria, cholera etc. Non-communicable diseases are not transmitted from one person to another and are diseases such as diabetes, heart diseases, cancers etc.

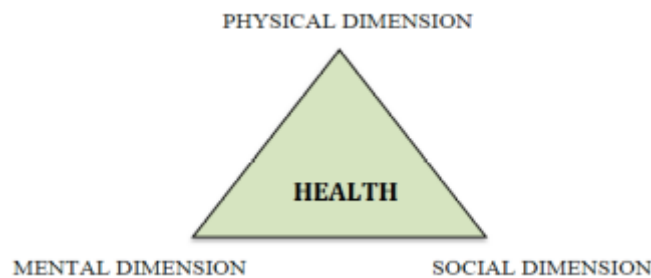
Health and disease are the two extremes of a spectrum. The lowest point on the health-disease spectrum is death and the highest point corresponds to the WHO definition of positive health which implies that there is a perfect functioning of the body and mind. A person who experiences optimum physical, mental and social well-being is said to be having positive health. Health fluctuates within a range of optimum well-being to various levels of dysfunction, including the state of total dysfunction, namely death. As health is a dynamic phenomenon, it changes continuously subject to frequent subtle variations. So health can not to be attained once and for all, but it should always be renewed. There are various levels of health and sickness and as long as we are alive, there is some degree of health in us.

The following is the health-sickness spectrum.



Dimensions of Health

There are several dimensions of health as also indicated in its definition. The WHO definition of health envisages three specific dimensions – the physical, the mental and the social. However, there can be more dimensions like spiritual, emotional, vocational and political. Each of these dimensions has its own nature while also interacting with each other all the time.



Dimensions of Health

Let us try to understand the three dimensions enumerated in the WHO definition of health.

I. Physical Dimension – The state of physical health in an individual implies perfect functioning of the body. It means that all cells and organs of your body are functioning at their optimum potential. Some of the signs of physical health in an individual are: “a clean and clear skin, bright eyes, lustrous hair, firm flesh, ideal body weight, sweet breath, good appetite, sound sleep, regular activity of bowel and bladder and smooth and coordinated body movements. All the organs of the body function normally; all the senses are intact; the resting pulse rate, blood pressure and exercise tolerance are all within the normal range for an individual’s age and sex.”

II. Mental Dimension – Mental health is not the mere absence of mental illness. It means that you have the ability to respond to different experiences of life with ease and a sense of purpose. Mental health can be defined as a state of balance between the individual and the surrounding world. Mind and body were earlier considered as separate entities, however, researchers have now discovered

that psychological factors can also result in conditions such as hypertension, ulcers etc. and at the same time biological illnesses can also result in mental health problems such as depression.

Psychologists have listed characteristics of mentally healthy people. According to them, mentally healthy individuals are free from internal conflicts; are not “at war” with oneself; are well-adjusted and are able to get along well with the others; accept criticism and are not easily upset; search for identity; have a strong sense of self-esteem; know their needs, problems and goals well; have a good self-control; face problems and try to solve them intelligently.

III. Social Dimension – The social dimension of health includes the social skills one possesses, and the way one is able to see oneself as a part of the society and function in it. In general, social health takes into account that every individual is a part of a family and of a wider community and focuses on the interaction of individuals with other members of the community.

From what you have read till now, you must have understood that the different dimensions of health are interdependent. The following discussion will make it clearer.

If you are not feeling well, i.e. you are physically unhealthy, you are likely to spend most of your time thinking about your health and you are also likely to be more irritable in your interactions with your family members and others. You will get a clearer picture if you observe the people who are suffering from chronic diseases like cancers or heart problems or who have been involved in serious accidents.

The influence of mental ill health on physical and social health can be observed when you are angry or when some sad event occurs in your life. You may lose your appetite and may not be able to behave in a normal manner either towards your family members and friends or even at your workplace. If such conditions persist for a long time, you may also develop chronic degenerative diseases.

Changing pattern of social life also influences physical and mental health of people. The changes in society like mechanization of agriculture, urbanization, overcrowding etc. have led to new situations responsible for accidents, occupational hazards, sexually transmitted diseases, stress, anxiety, depression, heart problems, and misuse of drugs, alcohol and tobacco etc.

As improper hygiene is supposed to be an important causative factor for communicable or infectious diseases, let us now try to understand it briefly.

5. HYGIENE

The word ‘hygiene’ comes from ‘Hygeia’, the Goddess of Health in Greek mythology. It refers to the science of health that includes all practices which prevent diseases and help in improving,

preserving and maintaining good health especially through cleanliness, proper sewage disposal and supply of safe drinking water. In other words, hygiene embraces all factors which contribute to healthful living.

Hygiene and cleanliness are terms that may often be used interchangeably, however, hygiene does not only mean 'cleanliness' but is a much broader term. In general, hygiene refers to practices that prevent spread of disease-causing organisms while the cleaning processes help in removing infectious microbes as well as dirt and soil and are therefore, considered as means for achieving hygiene.

Hygiene can be broadly classified into two types – personal and environmental. Personal hygiene involves practices performed by an individual to care for one's bodily health and well being such as bathing regularly; wearing clean clothes; washing hands regularly and especially before handling food; taking care of nails, teeth and feet; covering one's mouth while coughing; having clean personal appearance and following clean habits etc. Personal hygiene aims to promote standards of personal cleanliness within the living environment of individuals; it may be culture-specific and may also change over time.

Environmental hygiene can be further classified into domestic and community hygiene. Domestic hygiene includes hygiene of the home, need for fresh air, light and sanitation; hygienic storage of foods; hygienic disposal of wastes; need to avoid pests, rats, mice and insects etc. Community hygiene includes basic sanitary services such as water supply, disposal of human excreta and other solid and liquid wastes, vector control, food sanitation and housing facilities; which are all basic requirements of good health of the community members.

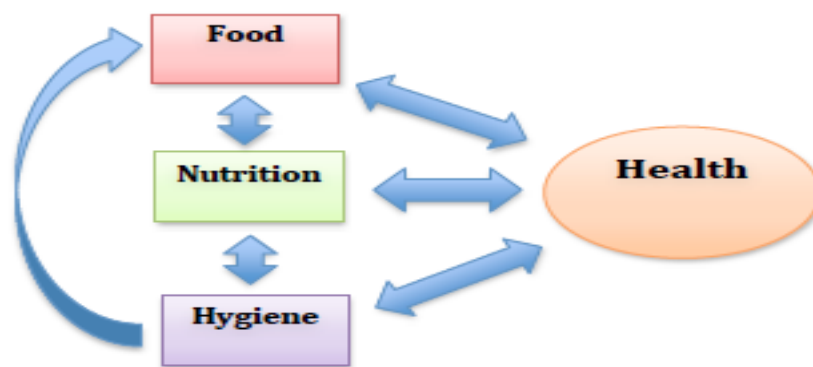
If individuals do not follow good hygiene practices, it can result in direct negative consequences on their health status. As good hygiene is an important aspect without which the other measures of health prevention and restoration may fail, therefore, this topic will be dealt with in greater detail in a separate module.

6. INTERRELATIONSHIP BETWEEN FOOD, NUTRITION, HEALTH AND HYGIENE

Food, nutrition, health and hygiene are dependent on each other. Let us try to understand the relationship between them, though going through the contents of this module, by now you must be already having an idea about the interrelationship between all these.

One of the important determinants of health is good nutrition which one gets through the consumption of adequate amounts of safe and nutritious food. The effect of nutrition begins even before a child is born. If the pregnant woman does not consume good quality food in the right quantity, she is not adequately nourished and gives birth to a low birth weight (LBW) baby.

Malnourished children have low immunity and are susceptible to infections, and their condition may further deteriorate if unhygienic practices are followed while feeding or looking after them. Unhealthy children who do not get proper food and nutrition grow up to become unhealthy adults who have a lower work capacity and are able to earn less money. Low income results in people buying and consuming less nutritious food either due to lack of awareness or access. Poverty may also result in inadequate knowledge about good hygiene practices; and lack of supportive environment such as availability of safe drinking water, toilet facilities etc. Poor hygiene practices lead to malnutrition and the cycle goes on and on.



Relationship between food, nutrition, health and hygiene

You may know that non-communicable diseases are increasing in our country at an alarming rate. India has in fact become the diabetic capital of the world and has the largest number of individuals suffering from diabetes. Diabetes is a health problem characterized by increased blood sugar levels. It may occur due to our genetic makeup (Type 1 diabetes) or due to our environmental factors such as improper dietary intake and sedentary lifestyle etc (Type 2 diabetes). Though we cannot modify our genetic makeup, we can certainly modify our food habits and avoid/ reduce the intake of sugar, fat, salt foods and increase the intake of food rich in vitamins, minerals and other protective constituents, with simultaneous increase in our physical activity. This proper intake of suitable foods will provide just the right kind of nutrition to the body to function normally. Hygiene practices followed by diabetes patients will also prevent the occurrence of complications (such as gangrenes etc.) in them. It will also help the patients to absorb and utilize the nutrients from the food that they eat and help in improving their immunity. In short, proper food intake will provide good nutrition; good hygiene practices will help in better utilization of food and improve the resistance to other diseases and complications and ultimately prevent the diabetic person from deterioration of his/ her diabetic condition and help him/ her lead a productive and healthy life.

7. Summary

In this module, you have learnt about the concepts of food, nutrition, health and hygiene. You have also studied about the three important functions of food, the various dimensions of health and how they are interrelated. The discussion has shown that food, nutrition, health and hygiene are interdependent and adverse changes in any one of them will also adversely affect the others. An adequate health and nutritional status can be maintained only by eating the right kind of safe nutritious food in the right amounts. Along with that one must follow hygienic practices all the time and make maximum efforts to attain optimum health.