



SNS COLLEGE OF TECHNOLOGY



(An Autonomous Institution)

Approved by AICTE, New Delhi, Affiliated to Anna University, Chennai

Accredited by NAAC-UGC with 'A++' Grade (Cycle III) &

Accredited by NBA (B.E - CSE, EEE, ECE, Mech & B.Tech.IT)

COIMBATORE-641 035, TAMIL NADU

19FTO302 - FOOD NUTRITION

UNIT I -INTRODUCTION TO NUTRITION SCIENCE

TOPIC 2

What is a Balanced Diet?

A balanced diet containing all the essential nutrients like carbohydrates, proteins, vitamins, fats,

minerals, and water in the correct proportion. Following are some of the important points.

A balanced diet is important for our body's normal growth and development. A balanced diet can be achieved by eating a variety of food items since there is no single food item with the correct amount of all the essential nutrients. The quantity of nutrients in a balanced diet always differs with age, sex, and physical activities taken by an individual.

Eating a balanced diet requires a certain amount of knowledge and planning. The basic composition of a balanced diet is highly variable as it changes from country to country depending upon the availability of food items. The nutrition group of ICMR (Indian Council of Medical Research) has recommended the composition of a balanced diet for Indians.

The major components of balanced diet includes cereals (like rice, wheat, and jowar), pulses, roots and tubers, fruits, milk, and dairy products, fats and oils, sugar, and groundnuts. They also recommended an intake of meat, fish, and eggs for non-vegetarians.

Importance of a Balanced Diet

Let us understand the importance of a balanced diet:

- Our body requires a proper supply of nutrition to work efficiently and be fit and healthy.
- Without balanced nutrition, the human body is more prone to diseases, infections, fatigue, and poor performance.
- Children with a poor diet may cause the risk of frequent infections and underdeveloped body growth. They can develop bad eating habits, which can continue for the rest of their lives.
- They are also at higher risk of obesity and other diseases that make up metabolic syndromes, like type 2 diabetes and high blood pressure. Hence, every individual must consume a balanced diet in order to protect themselves from all the risks mentioned above.
- Consuming a hormonal imbalance diet can affect the body in more ways than you can imagine. Therefore, a balanced diet can help to combat all the negative effects.

Balanced Diet: Factors To Be Considered

The food that we consume breaks down into simpler forms before it is absorbed and utilised in our bodies. These simpler substances are called Nutrients. Most of the foods that we consume have more than one nutrient. The nutrient content of a food item is called Nutritive value.

A balanced diet contains various kinds of major or macronutrients and minor or micronutrients, also called nutritive components of a Balanced Diet. It also contains non-nutritive components. Let's discuss these components in further detail:

1. Nutritive Components: The balanced nutritional diet has components that have some nutritive value. In other words, we can say nutritive components are the components of diet which provide energy and calories to the human body. Nutritive components are further classified into two categories:

- Macronutrients or Major nutrients
- Micronutrients or Minor nutrients

A. Macro Nutrients or Major Nutrients: These are the nutrients needed in relatively large amounts, and they constitute the majority of an individual's diet. Carbohydrates, Proteins and Fats are called Macro Nutrients or Major Nutrients

Carbohydrates

Carbohydrates are the main source of energy for the human body. It is formed by the chemical composition of Carbon, Hydrogen, and Oxygen. Carbohydrates are of two types- Simple Carbohydrates and Complex Carbohydrates.

Simple carbohydrates are quick-energy food and are easy to digest. Sources of simple carbohydrates are milk and milk products, natural fruits, and vegetables, including potatoes and carrots. They are also present in processed and refined food items like candy, sugar syrup, soft drinks, table sugar, etc.

Complex carbohydrates are better sources of energy than simple carbs since they are released slowly. They take time to digest. Sources of complex carbohydrates are bread, cereals (rice, wheat, bajra, corn, barley, ragi, etc.), legumes, pasta, starchy vegetables, whole grains, etc.

II. Proteins

Proteins are called the building blocks of our body because they are essential for the growth and repair of muscle and other body tissues.

Animal-based proteins are found in milk, meat, eggs, cheese, and fish. They are also called complete Proteins since they provide all the essential amino acids (EAA) our body needs in adequate amounts.

Plant-based proteins are found in pulses (legumes), cereals, beans, nuts, oilseeds, etc. All the proteins of plant origin are not complete proteins (except quinoa. Hence vegetarians should consume more and a variety of these foods in order to meet their protein needs.

III. Fats

Fats and oils are concentrated sources of energy.

- Fat is a compound made up of carbon, hydrogen, and oxygen.
- Fats provide heat and energy to our bodies. It also helps to maintain body temperature.
- These are classified into 3 major categories: simple lipids (e.g. triglycerides), compound lipids (e.g. phospholipids), and derived lipids (e.g. cholesterol).
- We can obtain fats from two main sources, Animal sources and Vegetable sources. The major sources of animal fats are butter, ghee, milk, cheese, eggs, fish, and meat. The sources of vegetable oils are groundnut, mustard, sesame, coconut, olives, sunflower, safflower, soybean, etc.
- Excess carbohydrates that we consume are converted into fats in our bodies.

Micronutrients

Vitamins

- a. Vitamins are organic substances that are vital and essential for life and health.
- b. They regulate metabolism, help in the growth and maintenance of our body and protect against disease by increasing immunity of our body.
- c. Our body cannot synthesize vitamins itself. Therefore, we need to consume natural sources such as fruits and vegetables.
- d. Vitamins are divided into two groups:

Fast food items like pizza, burgers, and samosa are rich sources of fats. Therefore, children who consume only fast foods tend to become obese.

- Water-soluble vitamins (Vitamin B group and Vitamin C)
- Fat-soluble vitamins (Vitamin A, D, E, and K)

e. Each vitamin has a specific function, and its deficiency may lead to particular deficiency diseases. For example, Vitamin A is necessary for normal growth and to keep eyes and skin healthy; deficiency of Vitamin A may cause night blindness or irregular growth of teeth.

III. Non-nutritive components

The non-nutritive components of a balanced diet are the components that do not have any nutritive value. We consume many non-nutritive substances in our daily diet like beverages (coffee, tea), direct and indirect food additives (artificial sweeteners), etc. Non-nutritive components are found in different forms like fibre or roughage, water, colour compound, flavour compound, plant compound, etc.