

# Balanced Diet

## Definition:

All the nutrients that are essential for Human body are called a Balanced diet if taken in right amount. Amounts of these nutrients vary with various individuals, because it depends on lifestyles, activities, and age of an individual.

Balanced diet contains organic nutrients like carbo-hydrates, vitamins, proteins, fats (lipids), dietary fibres and inorganic nutrients like  $H_2O$  & Minerals.

## Carbohydrates

Carbohydrates are the organic compounds which contain the elements of Carbon, Hydrogen and oxygen, while in carbohydrates the amount of carbon<sup>atoms</sup> and hydrogen<sup>atoms</sup> is same.

## Classification:

There are three types of Carbohydrates.

Monosaccharides

Disaccharides

Polysaccharides

## Monosaccharides:-

Glucose is the most important example of monosaccharides. Monosaccharides consist of 6 carbon atoms usually.

Glucose has the formula  $C_6H_{12}O_6$ . Other Monosaccharides are Galactose, Fructose etc.

Glucose is the simplest form of carbohydrates. Simplest mean quickly digested and absorbed sugars, honey and fruit juice.

## Disaccharides:

Disaccharides are formed by the combination of two molecules of Monosaccharides through condensation process. Some important examples of Disaccharides are Sucrose, maltose and lactose (Milk Sugar).

## Polysaccharides:

Polysaccharides are consists of large number of Monosaccharides combined together through condensation process. Its important examples are starch, glycogen and Cellulose.

- Starch:- Starch is very important polysaccharide. Animals store food in

the form of starch.

- Glycogen:- It is referred to as Animal starch.
- Cellulose:- A natural fibre found in plants, giving them structure and strength.

## Functions:

- Carbs are essential for:-
  1. Proper working of Human Brain, and vital organs.
  2. Source of Energy.
  3. Important role in the formation of DNA and lubricants.
  4. Main source of energy.

## Source:

1. Wheat
2. Oats
3. Sugar
4. Vegetables
5. Dairy Products

## Excess:

1. Obesity

## Deficiency:

Opposite of all functions.

# Proteins

Proteins are complex organic compounds, containing elements like Carbon, Hydrogen, Oxygen and nitrogen, while sulphur and phosphorous may also be present.

Proteins are the most complicated substances or constituents of food.

Proteins are made up of units known as amino acids.

## Functions:

1. Build & repair tissues.
2. Produce enzymes & Hormones.
3. Maintain fluid Balance.
4. Regulating Metabolism
5. Support Immune function.
6. Maintain cell shape & Structure.

# Lipids

Lipids are a type of Organic compounds that is not soluble in water but soluble in organic solvents. They are an important component of all living cells and play a variety of roles in body.

Examples of lipids including:

- Triglycerides (fats and oils).
- Phospholipids (cell membrane components).
- Steroids (Cholesterol, Hormones).

## Functions:

- 1- Lipids are a concentrated energy source, storing twice as much energy as carbohydrates or proteins.
- 2- Hormone production and regulation.
- 3- Lipids can act as signaling molecules, influencing cell behavior & communication.
- 4- Lipids in the skin and other tissues provide protection & cushioning against external factors.
- 5- Support immune system.

## Fats & Oils:

The difference between fats and oils lies in their state. Fats are solid, while oils are liquid at 20°C room temperature.

Fats in animal bodies are called saturated fats, these saturated fats are accompanied with a fatty substance called, Cholesterol.

Fats of plants are commonly unsaturated fats.