

Define 'Carbohydrates.' Describe different steps to digest these in human body? — CSS-2018

What are Carbohydrates?

Carbohydrates are one of the types of macro-biomolecule organic compounds that occur in food we consume and live in our blood tissues. There are also some other organic compounds that contain carbohydrates like sugar, starch and cellulose. Carbohydrates are composed of hydrogen, oxygen and carbon-dioxide. Beside all of that, carbohydrates are great source of energy for living beings, as 1 gram of carbohydrates contains about 4 calories.

Classification of Carbohydrates:

Based on their digestion process, carbohydrates are classified into three types, such as:

i. Monosaccharides

like glucose, Fructose, and galactose.

ii. Disaccharides

It is consist upon ^{two} monosaccharides molecule that are linked together in the form of chain.

For example, lactose, maltose, and sucrose

iii. Polysaccharides

It is consist upon the chain of two or more monosaccharides linked together. Example glycogen and starch.

Digestion of Carbohydrates

originally, carbohydrate is in the form of polysaccharides - saccharides are the sugar. As it goes into stomach polysaccharides break up into monosaccharides and then digested. In brief,

There are four steps of carbohydrates digestion

- 1. Mouth** - Breaking down of carbohydrates take place in mouth where saliva helps in breaking. 'Salivary Amylase' breaks down polysaccharides into disaccharides. Chewing helps to increase the surface area for the enzymes to act.
- 2. Stomach** - When chewed food in the shape of bolus reaches in stomach, it releases acid which digests a small amount of food and kills the germs present in the food.
- 3. Pancreas and Small Intestine** - Polysaccharides and disaccharides are further converted into monosaccharides with the help of enzymes like amylase, lactase and maltase. Here monosaccharides are formed like glucose which further absorbed into blood stream through villi.
- 4. Large Intestine** - Here, further nutrients are absorbed from remaining bolus and the rest of the material is extracted from the body into form of faeces.



