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Perspective

Role of Lipid and Carbohydrate in Human Body

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DESCRIPTION

Macronutrients are the nutrients, which are required in high amounts in the diet. They are classified into three groups. There are Carbon (C), hydrogen (H), and oxygen (O) atoms with a hydrogen–oxygen atom ratio of 2:1 in most cases (as in water). Monosaccharide, disaccharides, and polysaccharides are the three different types of carbohydrates. Monosaccharide and disaccharides are both soluble in water, however polysaccharides are not. Carbohydrates $Cx(H_2O)y$ are organic compounds made up of one or more simple sugars that have the generic basic formula $(CH_2O)x$ as monomers.

A lipid is a number of chemical molecules that are water insoluble. They are energy storage molecules and chemical messengers that include fats, waxes, oils, hormones, and some membrane components, sterols, fat-soluble vitamins (such as vitamins A, D, E, and K), mono glycerides, di glycerides, triglycerides, phospholipids, and others.

The basic difference between carbohydrates and lipids is that both carbohydrates and lipids operate as the human body's primary fuels and energy storage molecules. The biochemical metabolism of carbohydrates and fats has similar metabolic metabolisms, yet these macronutrients serve different roles. The distinctions between carbohydrates and lipids is their chemical and physical properties and their intended uses.

Lipid and carbohydrate metabolism are highly conserved processes that have an impact on almost every element of organismal life. *Caenorhabditis elegans* feed bacteria, which are made up of lipids, carbohydrates, and proteins, which are broken down into fatty acids, simple sugars, and amino acid precursors during digestion. *C. elegans* synthesises a wide range of metabolites that are essential for development and behavior using these nutrients. Lipid and carbohydrate structures, as well as production and breakdown processes, in *C. elegans*. Physiological roles for specific lipids and carbohydrates during development, and adaptation to changing environmental conditions in *C. elegans*.

Along with the human obesity and diabetes epidemics, lipid and carbohydrate metabolism has exploded in recent years. Even while over nutrition causes a variety diseases in humans, all animals need to eat to survive and reproduce, and dietary macronutrients are essential precursors for building cellular material for growth and reproduction.

The dynamic roles of fat depots and the regulation of energy balance, particularly the interplay between the nervous system and diverse metabolic pathways, have gotten a lot of attention in recent years. *Caenorhabditis elegans* is best renowned for its ability to examine mechanisms of development, nervous system function, and ageing using strong genetic and genomic studies.

A certain quantity of fat is required in the diet for the absorption of several fat-soluble vitamins and carotenoids. Fatty acids such as linoleic acid and alpha-linoleic acid are required in the diet. The simple precursors in the food will not be produced if essential fatty acids are not present. The correlations between hyperlipidemia and diabetes are their respective effects on atherogenesis, or the development of occlusive vascular disease. The essential aspects of the physiology and pathophysiology of lipid and carbohydrate metabolism, which constitute the basis for understanding the statistically determined linkages with atherogenesis, make the problem easier to comprehend.

Carbohydrates and lipids differ in that lipids participate in cell signaling pathways while carbohydrates do not. One gram of carbohydrate releases 4 kcal, while one gram of fats releases 9 kcal in terms of energy release. This is another distinction between carbohydrates and fats.

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