Carbohydrates glycerol, a form of alcohol, constructs fats

Carbohydrates and lipids/fats are a very important part of our lives. They have many similarities and differences among each other, which distinguish them from other macromolecules. Carbohydrates, which include sugar and their polymers, are used by organisms for fuel and building material. They come in many various forms going from simplicity to complexity.

The simplest, monosaccharides, compose of single sugars whose parts are arranged around asymmetric carbons. They generally have a molecular formula that is a multiple of CH_2O. Glucose, the most common monosaccharide, is of central importance in the chemistry of life. Energy is stored in glucose materials and extracts cells in the process of cellular respiration. When two monosaccharides join by covalently bonding through glycosidic linkage, they form a disaccharide, or double sugar. If more than two, such as hundreds and thousands bond, they form polysaccharides, or macromolecules. There are two main types of polysaccharides; storage and structural.

Starch and glycogen are used for storage. In plants, starch is mainly used because if it is synthesized, the plant can stock an abundance of sugar. Starch can be found in wheat, corn, rice, and other grains.

Glycogen, on the other hand, is more extensively branched, therefore, it is stored by humans and animals. Cellulose and chitin are the structural polysaccharides. Cellulose is a tough component of the walls in a plant cell. Structure is important since that’s what organisms build strong materials from. In parallel cellulose molecules, the cell wall of a plant is held together by bonds which are arranged in microfibrils. These strong cables help build

walls for plants and humans. Chitin, conversely, mainly deals with strengthening the arthropods’ exoskeletons.

The one thing all lipids have in common is the fact that they are hydrophobic. The three families of lipids are fats, phospholipids, steroids. Glycerol, a form of alcohol, constructs fats when it is mixed with fatty acids who consist of a carboxyl group on one end and hydrocarbon on the other. Three fatty acids linked to a glycerol make up triacylglyceral. If the carbon atoms composing the tail don’t form any double bonds then a unsaturated fat is made. Respectfully, if one or more bonds are formed, the fat becomes saturated. Phospholipids are related to these fats, but unlike triacylglyceral, they have only two fatty acids.

These lipids make up bi-layers which form a boundary between a cell and its external environment. The result of this simply becomes the fact that phospholipids are important to cell membranes. When a carbon skeleton consists of four interconnected rings, the third type of lipid, steroid, is built. Cholesterol, a manufacturer of steroids, is one reason that sex hormones are present in vertebrates. Because of that, it has important functions even though a high amount in the blood can contribute towards atherosclerosis. Both carbohydrates and fats are an important part of our everyday diets. Almost everything you eat contains carbohydrates. For example, while looking at a nutrition label from Basic 4, a common cereal, I noticed that a serving of one cup contains 43g of total carbohydrates.

Only 14 of those grams come from sugars, 4 come from fiber, and the remaining come from other carbohydrates. The fat make up is 3g in total; 0g

unsaturated, 1g polyunsaturated, and 1g monounsaturated. This fat intake is only 4% of the daily value an average person should have, and the carbohydrates are 14% of the average.

As you can tell, the advised amount of polymers to be consumed is rather high, therefore one conclusion can be drawn; they must be important!