

Carbohydrates

Carbohydrate (CHO) is the generic term for a wide range of compounds made up primarily of the following three components: glucose, fructose and galactose. They are found in many foods, such as bread, milk, potatoes, pasta, grains, fruit and vegetables. The primary function of CHO is to provide energy for the body. It also helps digestion.

Different types – different functions

Monosaccharides:

- **Glucose:** Main component of all complex CHO and key substance in human energy metabolism.
- **Fructose:** Has the highest level of sweetness and is important as an insulin-independent sugar.
- **Galactose:** Component of lactose.

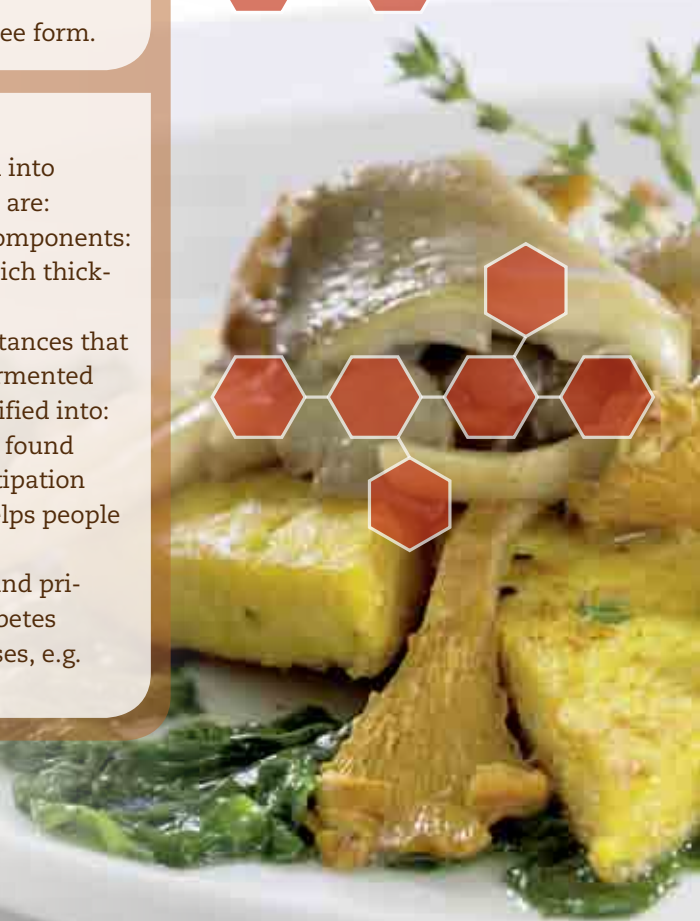
Disaccharides:

- **Sucrose (table sugar):** Glucose + fructose
- **Lactose (milk sugar):** Glucose + galactose
- **Maltose:** Glucose + glucose; does not occur in free form.

Polysaccharides:

These consist of at least 10 base units (glucose) and are divided into digestible and indigestible forms. The most common examples are:

- **Starch:** Main storage compound for plants. Consists of two components: Amylose, which is soluble in hot water, and amylopectin, which thickens and absorbs hot water (e.g. relevant for binding sauces).
- **Dietary fibre:** This term refers to a group of plant-based substances that are indigestible by humans but are partially or completely fermented in the intestines. Depending on their solubility they are classified into:
 - > **Insoluble dietary fibre**, such as cellulose and lignin. This is found primarily in whole wheat products and helps prevent constipation and haemorrhoids, reduces the risk of bowel cancer and helps people feel full after eating.
 - > **Soluble dietary fibre**, such as pectin and guar gum. It is found primarily in vegetables, fruit and seeds. It is important for diabetes prevention and can reduce the risk of cardiovascular diseases, e.g. by reducing cholesterol levels.



Carbohydrates

- Glucose
- Fructose
- Galactose
- Sucrose
- Lactose
- Maltose
- Starch
- Dietary fibre

Sources

- Fruit, honey, traces in most plants
- Fruit, honey
- Milk, dairy products
- Table sugar, fruit, maple syrup
- Milk, dairy products
- Fermentation, e.g. beer
- Vegetables, legumes, beer
- Grain products, potatoes, vegetables, fruit

Relevant modified carbohydrates

- **Glucose syrup:** A popular substitute for sugar and more commonly referred to as corn syrup because its main ingredient is usually corn-starch. It is used to sweeten food and drinks and in the production of sweets.
- **Invert sugar:** This is a kind of sucrose, less sweet but fruitier than sucrose. Used as syrup in the food industry and for cocktails.
- **Modified starch:** Processed chemically to provide various characteristics, such as greater resistance to heat/cold, improved thickening qualities and hence flow properties. It is used as a thickener, carrier and stabilizer.



MINOR'S

