



Chemical Modification of Food Components and its Impact on Nutritional Quality

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Description

The science of nutrition chemistry plays an essential role in understanding the importance of a healthy diet and its impact on our overall well-being. Nutrients are essential chemicals found in food that are required for growth, development, and maintenance of the body's functions. There are six classes of nutrients: carbohydrates, proteins, fats, vitamins, minerals, and water. Each of these nutrients serves a specific purpose in the body and is required in different amounts for optimal health. Carbohydrates are one of the primary sources of energy for the body. They are composed of carbon, hydrogen, and oxygen and can be found in foods such as bread, rice, and fruits. Simple carbohydrates, such as table sugar and high-fructose corn syrup, are quickly absorbed by the body and can lead to rapid increases in blood sugar levels. On the other hand, complex carbohydrates, such as whole grains, provide a slow and steady release of energy over time. Proteins are essential for building and repairing tissues in the body. They are composed of amino acids, which are linked together in chains. Foods such as meat, fish, eggs, and dairy products are all excellent sources of protein. Each amino acid has a specific role in the body, and a deficiency in any one of them can lead

to health problems. Fats are an important source of energy for the body and are necessary for the absorption of fat-soluble vitamins. They are composed of carbon, hydrogen, and oxygen and can be found in foods such as nuts, seeds, and oils. Unsaturated fats, such as those found in fish and nuts, are considered healthy fats, while saturated and trans fats, found in foods like butter and processed foods, can increase the risk of heart disease.

Vitamins are organic compounds required in small amounts for various metabolic processes in the body. They can be found in a wide range of foods, including fruits, vegetables, and fortified cereals. There are two types of vitamins: fat-soluble and water-soluble. Fat-soluble vitamins, such as vitamins A, D, E, and K, are stored in the body's fat tissue and can accumulate over time, while water-soluble vitamins, such as vitamins B and C, are not stored in the body and must be consumed daily. Minerals are inorganic substances required for various functions in the body, including building strong bones and teeth and maintaining a healthy immune system. They can be found in foods such as dairy products, meat, and leafy green vegetables. Some of the essential minerals include calcium, iron, and zinc. Water is an essential nutrient that makes up about 60% of the human body. It is required for various functions, including regulating body temperature, transporting nutrients, and removing waste products from the body. Water can be obtained from a wide range of sources, including drinking water, foods, and beverages.

Nutrition chemistry also plays an essential role in understanding how nutrients interact with one another and how certain nutrients can impact health. For example, calcium is necessary for building strong bones, but it must be consumed along with vitamin D to be absorbed properly. Similarly, iron is required for the production of red blood cells, but consuming too much iron can lead to toxicity.

In conclusion, nutrition chemistry is a crucial area of study that helps us understand the importance of a healthy and balanced diet. By understanding the chemical composition and reactions involved in the digestion, absorption, and metabolism of food, we can make informed decisions about what we eat and how it impacts our health. A well-balanced diet that lives.

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