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كلية العلوم

BCH 445
Biochemistry of nutrition
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Nutrition has played a significant role in your life.

Every day, several times a day, you select foods that influence your body's health for better or worse.



Nutrition

Nutrition: The science of the nutrients in foods and their actions within the body. A broader definition includes the study of human behaviors related to food and eating.

Foods: Products derived from plants or animals that can be taken into the body to yield energy and nutrients for the maintenance of life and the growth and repair of tissues.

Diets: The foods and beverages a person eats and drinks.

Balanced diet: The diet which provides the body with sufficient amount of foodstuffs selected in proper proportions (50-60% CHO, 25-30 %Fat, 15-20% protein, all vitamins and minerals). It has to satisfy the body requirements both quantitatively and qualitatively to prevent malnutrition.

Fortification of food: Addition of nutrient element which is responsible for the prevention of malnutrition to a food substance commonly consumed by all population.

Therapeutic food: (supplementary food) is a food substance which is rich in a certain nutrient element or its precursor, given to the mal-nourished person to correct nutritional.

Nutrient Requirements: The minimum amounts of nutrients needed to normal health and growth.

Requirements may be affected by age, sex, weight, physical activity, and certain physiological states (pregnancy and lactation) , and health status.



Aspects of Nutrition

Nutrition has biological and socioeconomic, cultural and behavioral aspects

Biological aspect: diabetes mellitus (DM), coronary heart disease (CHD), cancer and asthma.

Socioeconomic and cultural aspects: Socioeconomic factors play a significant role in nutritional deficiency diseases.

Behavioral aspect: Individual's daily human activities and nutrition behavior could influence health status e.g. obesity.

Functions of Food

Body building and repair of tissues as well as maintenance and regulation of tissue functions.

1- Energy production: Carbohydrates and Fats

2- Tissue building: Proteins

3- Maintenance and regulation of tissue functions: Vitamins and minerals

Nutrients: Chemical substance or constituent of food necessary to sustain normal function of body or a chemical substance which helps to maintain body to build tissue and regulate body function.

Types of nutrients:

There are several ways to classify the classes of nutrients.

Macro-nutrients or Bulk nutrients, primary foods needed in bulk or larger amounts e.g. carbohydrates, fats and proteins.

Micro – nutrients, lesser amounts (Vitamins + Minerals).

Organic nutrients, contain carbon (carbohydrates, fats, proteins and vitamins).

Inorganic nutrients, do not contain carbon (minerals and water).

Energy-yielding nutrients, (carbohydrates, fats and proteins).

Do not supply energy, or calories, to the body, Vitamins and Minerals.

Essential nutrients, nutrients that must be obtained from food because the body cannot make them or cannot make enough of them itself (carbohydrates, essential F A, essential A A, vitamins, minerals and water).

Nonessential nutrients, body can make from other nutrients ingested (cholesterol and some amino acid).