**Proper Nutrition**

**Introduction to Nutrition**

**Definition of nutrition:**

Nutrition is the process of providing the body with the necessary substances through the consumption of a variety of foods. This process involves digesting and metabolizing food to obtain the nutrients needed to maintain life and health.

The importance of nutrition:

**Provision of energy:** Food is the main source of energy for the body. Nutrients from food are converted into energy, which is necessary for all physiological processes.

**Development and growth:** Especially important for children and adolescents, nutrition provides the necessary building blocks for growth, development and proper function of all tissues and organs.

**Maintaining health:** Proper nutrition helps to strengthen the immune system, maintains optimal cholesterol and blood pressure levels, educes the risk of developing heart disease and other chronic diseases.

**Support for organ function:** Nutrition affects the functioning of all body systems, ensuring the proper functioning of the heart, kidneys, liver and other important organs.

**Body weight control:** A rational nutrition helps to maintain a healthy body weight, which affects the overall health of the body and reduces the risk of developing obesity and related problems.

**Distinguishing between macro- and micronutrients**

**Macronutrients:**

Calcium:

* *Role*: Construction and strengthening of bones and teeth, regulation of blood clotting, muscle function.

Magnesium:

* *Role:* Participation in protein synthesis, muscle and nervous system function, regulation of blood sugar levels.

Potassium:

* *Role:* Maintaining electrolyte balance, regulating blood pressure, participating in the transmission of impulses in the nerves.

Phosphorus:

* *Role:* Construction of bones and teeth, energy metabolism, synthesis of nucleic acids.

Sodium:

* *Role:* Regulation the balance of fluids in the body, participation in the transmission of nerve impulses.

**Micronutrients:**

Iron:

* *Role:* Transport of oxygen in the blood, participation in the synthesis of hemoglobin, support of immunity.

Zinc:

* *Role:* Participation in growth and development, immune system function, maintenance of skin sensory functions.

Copper:

* *Role:* Participation in collagen synthesis, energy metabolism, and iron transport.

Selenium:

* *Role:* Antioxidant function, thyroid support, protection of cells from damage.

Iodine:

* *Role:* Synthesis of thyroid hormones, normalization of metabolism.

**Distinguishing between macro- and micronutrients:**

⦁ *Amount: Macronutrients are needed in larger amounts, while micronutrients are needed in small amounts.*

*⦁* *Role: Macronutrients mainly provide structural components, while micronutrients mostly perform regulatory functions in biochemical processes.*

*⦁* *Distribution: Macronutrients are present in the body in significant amounts, while micronutrients are present in trace amounts.*

These elements are essential for maintaining optimal health and functioning, and their proper intake is important for preventing deficiencies and supporting various biological processes.

**Identification foods that contain the essential nutrients**

**Proteins:**

**Meat:** The largest source of protein are meat products such as chicken, beef, and pork.

**Fish:** Fish are rich in high quality proteins and omega-3 fatty acids, especially salmon, tuna, and sardina

**Eggs:** Eggs are an important source of complete proteins and other nutrients.

**Soy products:** Tofu and other soy products offer a vegetarian alternative to protein.

**Fats:**

**Olive oil:** The monounsaturated fats in olive oil promote heart health.

**Avocado:** Contains healthy saturated fats and polyunsaturated fatty acids.

**Nuts:** Nuts are rich in polyunsaturated fatty acids, especially walnuts and almonds,

**Carbohydrates:**

**Vegetables:** Broccoli, carrots and other vegetables contain complex carbohydrates and important vitamins.

**Whole grain products:** Barley, buckwheat, and other whole grain contain healthy carbohydrates and lots of fiber.

**Fruits:** Apples, bananas and berries are sources of natural sugars and vitamins.

**Vitamins and Minerals:**

**Vegetables and Fruits:** Rich in vitamins A, C, K and folic acid.

**Dairy products:** Provide calcium to strengthen bones and teeth.

**Meat and Fish:** Sources of iron and zinc which important for hematopoiesis and immunity.

**Recommendations for carbohydrate consumption**

It is important that carbohydrates provide 50-60% of the daily dietary energy requirement. The amount of energy obtained with added sugar should not exceed 10% of daily dietary energy.

The body, especially the brain, needs a constant supply of glucose to function efficiently and effectively. A lack of carbohydrates can lead to the synthesis of glucose from the body's own proteins, which can affect the body's protective functions.

Carbohydrates are classifield as simple and complex.

Simple carbohydrates are quickly absorbed by the body and are an optimal source of energy, especially after exercise or to overcome hunger. For example: sugar, honey, fruits, vegetables, juices, and beverages are sources of simple carbohydrates. However, excessive consumption of sugar-containing foods should be avoided, as they do not contain other nutrients.

Foods that contain complex carbohydrates are digested more slowly and provide a feeling of satiety for a long time. Starch, which is a common complex carbohydrate, is found in wheat, potatoes, rice, and corn and it is a traditional staple of diets in various cultures.

Fiber, also known as dietary fiber, plays a special role among complex carbohydrates. The body hardly absorbs fiber, but it is essential for the normal digestive process.