Proper Nutrition

**Introduction to Nutrition**

**Definition of nutrition:**

 Nutrition is the process of providing the body with necessary substances through the consumption of various foods. This process includes the ingestion and digestion of food to obtain nutrients essential for maintaining life and health.

Importance of nutrition:

* **Energy provision:** Nutrition is the main source of energy for the body. Nutrients obtained from food are converted into energy necessary for performing all physiological processes.
* **Development and growth:** Especially important for children and adolescents, nutrition provides the necessary building materials for growth, development, and proper function of all tissues and organs.
* **Health maintenance:** Proper nutrition contributes to strengthening immunity, maintains optimal cholesterol levels and blood pressure, reduces the risk of developing heart disease and other chronic illnesses.
* **Organ function support:** Nutrition affects the work of all body systems, ensuring proper function of the heart, kidneys, liver, and other vital organs.
* **Body weight control:** Rational nutrition helps in maintaining a healthy body weight, which affects the overall state of the organism and reduces the risk of developing obesity and related problems.

**Distinguishing between macro- and microelements**

Macroelements:

* Calcium:
* Role: Building and strengthening bones and teeth, regulating blood clotting, muscle functioning.
* 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 nerve impulse transmission.
* Phosphorus:
* Role: Building bones and teeth, energy metabolism, synthesis of nucleic acids.
* Sodium:
* Role: Regulating fluid balance in the body, participating in nerve impulse transmission.
* Microelements:
* Iron:
* Role: Oxygen transport in blood, participation in hemoglobin synthesis, supporting immunity.
* Zinc:
* Role: Participation in growth and development, immune system function, maintaining sensory functions of the skin.
* Copper:
* Role: Participation in collagen synthesis, energy metabolism, iron transport.
* Selenium:
* Role: Antioxidant function, supporting thyroid gland, protecting cells from damage.
* Iodine:
* Role: Synthesis of thyroid hormones, normalizing metabolism.

**Distinguishing between macro- and microelements:**

* Quantity: Macroelements are needed in larger quantities, while microelements are required in small amounts.
* Role: Macroelements mainly provide structural components, while microelements mostly perform regulatory functions in biochemical processes.
* Distribution: Macroelements are present in the body in significant quantities, while microelements are in trace amounts.

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

**Identifying products that contain necessary nutrients.**

Proteins:

* Meat: The largest source of protein is meat products, such as chicken, beef, and pork.
* Fish: Fish, especially salmon, tuna, and sardines, are rich in high-quality proteins and Omega-3 fatty acids.
* Eggs: Eggs are an important source of complete proteins and other nutrients.
* Soy products: Tofu and other soy products constitute a vegetarian alternative for proteins.

Fats:

* Olive oil: Monounsaturated fats in olive oil promote heart health.
* Avocado: Contains healthy saturated fats and polyunsaturated fatty acids.
* Nuts: Nuts, especially walnuts and almonds, are rich in polyunsaturated fatty acids.

Carbohydrates:

* Vegetables: Broccoli, carrots, and other vegetables contain complex carbohydrates and important vitamins.
* Whole grain products: Barley, buckwheat, and other whole grain products contain beneficial 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 for strengthening bones and teeth.
* Meat and Fish: Sources of iron and zinc, important for blood formation and immunity.

**Recommendations for carbohydrate consumption**

* It is important that carbohydrates provide 50-60% of the daily dietary energy needs. The amount of energy obtained from added sugar should not exceed 10% of daily dietary energy.
* The body, especially the brain, needs a constant supply of glucose for efficient and effective work. 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 classified into simple and complex. Simple carbohydrates are quickly absorbed by the body and are an optimal source of energy, especially after workouts or to overcome hunger. For example: sugar, honey, fruits, vegetables, juices, and drinks are sources of simple carbohydrates. However, excessive consumption of sugar-containing products should be avoided as they do not contain other beneficial substances.
* Products containing complex carbohydrates are absorbed more slowly and provide a feeling of fullness for a long time. Starch, which is a common complex carbohydrate, is found in wheat, potatoes, rice, corn, and is a traditional basis of diets in various cultures.
* Fiber, also known as dietary fiber, plays a special role among complex carbohydrates. The body barely absorbs fiber, but it is necessary for the normal digestion process.