

## Summary:

Nutrition may be defined as the science of food and its relationship to health. Nutritional requirements depend on the needs of the athletes (e.g., size, gender, requirements of the sport). Carbohydrates, fats, and proteins are the principal compounds that make up our food and provide energy for our bodies. Vitamins and mineral play an important role in energy production and are also involved in bone health and immune function. Carbohydrate provides quick energy to the body and is not stored in the body for long. The ratio of carbohydrates is increased in endurance events/activities. The basic unit of carbohydrates is the sugar molecule or monosaccharide. Excess of carbohydrates are converted into fat by the liver and stored in adipose tissue. The basic structure of proteins is a chain of amino acids that contain carbon, oxygen, hydrogen and nitrogen. In addition, they are used to produce hormones, enzymes, and haemoglobin. The body can make only 11 of the amino acids that are known as the non- essential proteins or amino acids. And eight amino acids (nine in children and certain older adults) cannot be synthesized by the body and therefore must be provided preformed in foods. Thus they are called **essential proteins or amino acids**. If the protein of a food contain is enough of the essential amino acids it is called a complete protein food. If the protein of a food does not contain all the essential amino acids, it is called an incomplete protein food. Lipid is general term that includes oil, fats, and waxes. Oil are liquid at room temperature, while fats remain solid. Fats contain carbon, hydrogen and oxygen. The basic unit of fat is the fatty acid, which is also the part of fat that is used for energy production. Approximately 98% of dietary fat is in the form of **triglycerides**, and about 90% of fat in the body is stored in the adipose tissue depots, mostly in the **subcutaneous** tissues. Thirteen different vitamins have been isolated, analyzed, classified, and synthesized, and recommended dietary allowance (RDA) levels have been established. Vitamins are classified as either water-soluble or fat-soluble. Minerals contain elements needed by our body in small quantities. But these are essential for proper growth and functioning of the body. Minerals are constituents of enzymes, hormones, and vitamins; they are combined with other chemicals (for example, calcium phosphate in bone and iron in the heme of haemoglobin) or exist singularly (such as free calcium in body fluids). Water makes up 40 to 60% of an individual's body mass and constitutes 65 to 75% of the weight of muscle and approximately 50% of the weight of body fat. Normally, approximately 2.5 L of water is required each day for a fairly sedentary adult in a normal environment.