The primary purpose of food is to provide the body with a variety of nutrients that are essential to the physiological and biochemical functions of the body.

There are six major classes of nutrients: carbohydrates, fats, proteins, vitamins, minerals and water. Nutrients perform three major functions: (1) provide energy for metabolism (2) build and repair tissue (3) regulate body processes.

Carbohydrate foods are the best source of energy for athletes. It is recommended that 60-70% of an athlete's total caloric intake is from carbohydrates. However, most athletes consume a diet in which only 45% of total caloric intake are from carbohydrates. Carbohydrates provide the energy the body needs to exercise, train and compete.

The two major types of carbohydrates are simple and complex. Simple carbohydrates are simple sugars composed of a single or double glucose molecule. Sources are honey, candy, soda and sweets. Simple carbohydrates supply energy to the body but do not provide essential nutrients.

Complex carbohydrates are made-up of long strains of glucose molecules. Sources include breads, cereals, pasta and rice. Complex carbohydrates provide energy for the body and also provide vitamins, minerals and fiber. The vitamins and minerals from the complex carbohydrates provide the substances required for metabolic processes.

Dietary fat is essential for proper body functioning. Fat aids in the digestion and absorption of fat-soluble vitamins. Fat is also required for the production of cell membranes and body energy. During light, continuous exercise the body acquires 50% of its energy from fat. However, stored fat requires 30 to 60 minutes of exercise to become available as fuel while exercising.

Thirty-eight percent of the average American's caloric intake comes from fat. The American Heart Association recommends that no more than 30% of an individual's total caloric intake should come from fat. Only 25% of an athlete's total caloric intake should come from fat. The type and amount of fat eaten can significantly affect athletic performance.

Unsaturated fat is liquid at room temperature and has been shown to decrease the risk of coronary artery disease. Corn oil, canola oil, olive oil and other vegetable oils all contain unsaturated fats.

Saturated fat is solid at room temperature. It promotes the build-up of fatty-deposits on artery walls, increasing the risk of coronary artery disease (CAD). Saturated fats are found in animal products.

Twelve to fifteen percent of an athlete's total caloric intake should come from protein. The recommended daily allowance of protein is 0.8 grams per kilogram of body weight for an adult. Therefore, if an athlete weighs 70 kilograms, he or she should consume 56 grams of protein. Most people consume 2 times the recommended amount of protein daily. One must remember that excess protein is stored as fat.

Proteins are made-up of nine essential and 13 non-essential amino acids. Non-essential amino acids are produced in the body, while essential amino acids must be obtained through the diet. Amino acids are building blocks for protein and are essential for the growth and development of the human body.

Protein builds repairs and maintains all body tissues. Proteins are not a good source of energy and should not be used as an energy source.

If counting calories remember:

- 1 gram of carbohydrate = 4 calories
- 1 gram of protein = 4 calories
- 1 gram of fat = 9 calories
- 1 gram of alcohol = 7 calories

References