

Nutrition and You

Nutrition is the relationship of foods to the health of the human body . Proper nutrition means that you are receiving enough foods and supplements for the body to function at optimal capacity. It is important to remember that no single nutrient or activity can maintain optimal health and well being, although it has been proven that some nutrients are more important than others. All of the nutrients are necessary in different amounts along with exercise to maintain proper health.

There are six main types of nutrients used to maintain body health. They are: carbohydrates, fats, proteins, vitamins, minerals, and water . They all must be in balance for the body to function properly. There are also five major food groups. The groups are: fats and oils, fruits and vegetables, dairy products, grains, and meats.

Exercise is also an important part of nutrition. Exercise helps tone and maintain muscle tissue and ensure that the body's organs stay in good condition. Healthy eating without exercise will not result in good nutrition and a healthy body - neither will exercise without nutrition. The most important thing about exercise is that it be practiced regularly and that it be practiced in accompaniment with a healthy diet. It is also desirable to practice more than one sport as different sports exercise different areas of the body.

Carbohydrates, proteins, and fats are the sources of energy for the body. The contained energy is expressed in calories. There are 9 calories per gram in fat and there are about 4 calories per gram in proteins and carbohydrates . Carbohydrates are the main source of energy for the body. This energy is mostly used for muscle movement and digestion of food. Some sources of carbohydrates are : grains, fruits, vegetables, and anything else that grows out of the ground. The energy in carbohydrates is almost instantly digested. This results in a quick rise in blood sugar which is soon followed by a drop in blood sugar which is interpreted by the body as a craving for more sugars. This sugar low may also result in fatigue, dizziness, nervousness, and headache. However, not all carbohydrates do this. Most fruits, vegetables, legumes, and whole grains are digested more slowly.

Fats, which are lipids, are the source of energy that is the most concentrated. Fats produce more than twice the amount of energy that is in carbohydrates or proteins. Besides having a high concentration of energy, fat acts as a carrier for the fat soluble vitamins, A, D, E, and K. Also, by helping in the absorption of vitamin D, fats help make calcium available to various body tissues, in particular, the bones and teeth. Another function of fat is to convert carotene to vitamin A. Fat also helps keep organs in place by surrounding them in a layer of fat. Fat also surrounds the body in a layer that preserves body temperature and keeps us warm. One other function of fat is to slow the production of hydrochloric acid thereby slowing down digestion and making food last longer. Some sources of fats are meats and nuts as well as just plain oils and fats.

Proteins, besides water, are the most plentiful substance in the body. Protein is also one of the most important element for the health of the body. Protein is the major source of building material in the body and is important in the development and growth of all body tissues. Protein is also needed for the formation of all hormones. It also helps regulate the body's water balance. When proteins are digested they are broken down into simpler sections called amino acids. However, not all proteins will contain all the necessary amino acids. Most meat and dairy products contain all necessary amino acids in their proteins. Proteins are available from both plants and animals. However, Animal proteins are more complete and thus desirable.

Knowledge of the nutrients and their function is essential to understanding the importance of good nutrition. As mentioned above, there are six nutrients.

All vitamins are organic food substances that are found only in living things, plants and animals . It is believed that there are about twenty substances that are active as vitamins in human nutrition . Every vitamin is essential to the proper growth and development of the body. With a few exceptions, the body cannot make vitamins and must be supplied with them. Vitamins contain no energy but are important as enzymes which help speed up nearly all metabolic functions. Also, vitamins are not building components of body tissues, but aid in the construction of these tissues. It is impossible to reliably determine the vitamin requirements of an individual because of differences in age, sex, body size, genetic makeup, and activity. A good source of a recommendation is the RDA. The RDA makes it's recommendations based on studies of consumption of the given nutrient. On the recommendation it will usually specify what size diet the recommendation is based on, for example, a two thousand calorie per day diet. It is harmless to ingest excess of most vitamins. However, some vitamins are toxic in large amounts. Vitamin A is a fat soluble vitamin which is only available in two forms. Pre-formed, which is found in animal tissue. The other is carotene, which can be converted into Vitamin A by animals . Carotene is found in easily found in carrots as well as other vegetables . Vitamin A is important to the growth and repair of body tissues and helps maintain a smooth, soft, and disease free skin. It also helps protect the mucus membranes of the mouth, nose, throat, and lungs which reduces the chance of infection. Another function is helping mucus membranes combat the effects of air pollutants. Vitamin A also protects the soft lining of all the digestive tract. Another function of vitamin A is to aid in the secretion of gastric juices.

The B complex vitamins have many known sub-types, but they all are water soluble vitamins. The B vitamins can be cultivated from a variety of bacteria, yeast, fungi, or molds . They are active in the body by helping the body convert carbohydrates into glucose, a form of sugar. B vitamins are also vital in the metabolism of proteins and fats. They are also the single most important element in the health of the nerves. B vitamins are also essential for the maintenance of the gastrointestinal tract, the health of the skin, hair, eyes, mouth, liver, and muscle tone. The intestine contain a bacteria that produces vitamin b but milk-free diets, and taking sulfonamides or antibiotics can destroy these bacteria . Whole grains contain high concentrations of B complex vitamins. Also, enriched bread and cereal products contain high concentrations of B vitamins due to a governmental intervention of the whole food group to ensure that the nation was getting enough B vitamins

Vitamin C, also known as ascorbic acid, is a water soluble vitamin. It is sensitive to oxygen and is the least stable of all vitamins . One primary function of vitamin C is to maintain collagen, a protein necessary for the formation of skin, ligaments, and bones. Vitamin C also plays a role in healing of burns and wounds because it aids the formation of scar tissue. It also helps form red blood cells and prevent hemorrhaging. Another function is to prevent the disease, scurvy, which used to be seen in sailors because of their lack of vitamin C in their diet. This was corrected by issuing each sailor one lime per day which supplied citric acid, a source of vitamin C. Other sources include broccoli, Brussels sprouts, Strawberries, Oranges, and grapefruits .

Vitamin E is a fat soluble vitamin which is made up of a group of compounds called tocoherols. There are seven forms of it but the form known as Alpha tocoherol is the most potent . Tocoherols occur in the highest concentrations in cold pressed vegetable oils, all whole raw seeds and nuts, and soybeans. Vitamin E plays an essential role in cellular respiration of all muscles, especially the cardiac and skeletal. It makes these muscles able to function with less oxygen, thereby increasing efficiency and stamina. It also is an antioxidant, which prevents oxidization. This prevents saturated fatty compounds from breaking down and combining to form toxic compounds.

Minerals are nutrients that exist in the body and in organic and inorganic combinations . There are approximately seventeen minerals that are necessary in

human nutrition . Although only about four or five percent of the body weight is mineral matter, minerals are important to overall mental and physical health. All of the body's tissues and fluids contain some amount of mineral. Minerals are necessary for proper muscle function and many other biological reactions in the body. Minerals are also important in the production of hormones. Another important function of minerals is to maintain the delicate water balance of the body and to regulate the blood's pH. Physical and emotional stress causes a strain on the body's supply of minerals. A mineral deficiency often results in illness, which may be treated by the addition of the missing mineral to the diet. Calcium, a primary mineral, is available through dairy products. In order to get all the other minerals, one should eat protein rich foods, seeds, grains, nuts, greens, and limited amounts of salt or salty foods.

Nutrition is just one aspect of total body health. It is important to remember that one must compliment good nutrition with good exercise and emotional health in order to achieve complete well being. It is also important to remember that no one part of nutrition will completely fulfill the body's requirements for health.