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Nutrition and the Athlete *Vitamin and Mineral Supplements*

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For the public as well as for athletes, vitamin/mineral supplements are frequently used nutritional supplements. Much of this use represents an expensive and wasted effort. Well-planned diets can meet most of the vitamin and mineral needs of people.

Some athletes think that vitamin or mineral supplements help enhance their performance. However, unless a vitamin or mineral deficiency exists there is little evidence that extra intakes of vitamins and minerals will improve performance.

Vitamins

Vitamins do not contain energy themselves. They help the body use the energy nutrients. Many vitamins help maintain normal body tissue. They act as a regulator and are needed in only very small amounts.

Some athletes supplement their diets without question. Using a simple multi-vitamin or mineral supplement that does not provide more than 100 percent of the Daily Value for any of the nutrients will most likely not be harmful. However, "super" supplements, taking large doses or megadoses, may be harmful.

Some vitamins such as vitamins A and D can be stored in the body. Excesses of these vitamins can lead to undesirable and destructive body changes such as headaches, muscle and joint pains. In addition, many of the vitamins and minerals work in balance with each other. If one appears in a greater than normal amount, the other vitamins or minerals become unbalanced in supply. The advantage of getting vitamins by eating a variety of foods is they usually come in balanced proportions.

Studies that examine vitamin status of athletes compared to non-athletes indicate no differences between the two groups. Supplementation with water-soluble vitamins improved blood levels but the improved levels did not enhance athletic performance.

As for antioxidant vitamins such as vitamin E, vitamin C and beta-carotene, there is some concern that strenuous physical activity produces a stress that may require extra antioxidants. However, supplementation with these antioxidants does not consistently show that athletic performance will be improved. The taking of antioxidant supplements as an extra protection is controversial. Without question, athletes and those who exercise regularly should eat foods such as fruits and vegetables that are rich in antioxidants.

Minerals

Iron is one of the minerals of concern to some athletes. In blood, iron is responsible for carrying oxygen to body cells and removing carbon dioxide.

Athletes who may be at risk for iron deficiency fall into one of four classifications:

- a) Females — due to loss of iron through menstrual blood and, possibly, low iron intakes
- b) Adolescent males — due to extra needs of the growth stage
- c) Vegetarian athletes — due to lack of red meats that contribute iron and other nutrients needed for blood production
- d) Endurance athletes — due to a greater than usual loss of iron through sweat

To get adequate iron, eat a variety of iron-rich foods. Lean meats provide an excellent source of iron. Enriched breads and grain products and some dark, leafy green vegetables are other iron sources. Eating foods rich in vitamin C such as citrus fruits, juices and other fresh fruits or vegetables along with iron-rich foods also will help iron absorption. Further iron supplementation should be only at the direction of a physician.

"Sports anemia" is a term often used to describe a low hemoglobin condition that is relatively common at the beginning of training. It is characterized by exhaustion and fatigue. After adaptation to training, sports anemia seems to subside. The severity and exact causes of this condition have not yet been determined. Possible explanation for this condition are inadequate dietary iron intakes by athletes or the use of protein for tasks other than red blood cell production during the early training stages.

Calcium is another mineral of concern for female athletes. Studies show females often shun dairy and milk products which are the richest dietary calcium sources. Low calcium intakes may put bone health at risk. Although weight bearing exercise will help to strengthen bone tissue, calcium also is required.

Female athletes whose menstrual cycles have stopped have an increased risk of poor bone health. Cessation of the menstrual cycle indicates a disruption of the normal estrogen cycle. Low estrogen levels may lead to a loss of calcium from bone tissue.

Dairy products should be included at least two to four times daily in food plans for athletes. Low-fat dairy products can be used if fat content is a concern. In addition to dairy products, some calcium can be obtained from leafy green vegetables and fish such as salmon or sardines.

In general, most athletes consume diets that provide adequate amounts of minerals. Athletes should eat foods that are high in both vitamin and mineral value rather than rely on supplements.

Resources

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