

Vitamins, Minerals, and Athletic Performance

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The main source of vitamins and minerals are fruits and vegetables. However, certain vitamins and minerals are especially important for athletic performance. These include B-vitamins, iron, zinc, selenium, and the electrolytes—sodium, potassium, chloride, calcium, magnesium, and phosphorus.

What are vitamins?

Vitamins are nutrients that are essential to maintain normal body functions. There are two different categories of vitamins, water-soluble and fat-soluble. This means that certain vitamins need a water or fat to be absorbed and used by the body.

How can vitamins help my athletic performance?

Water-soluble vitamins, such as the B-vitamins, are important for energy production. This does not mean they are used as energy, but they assist in getting energy out of carbohydrates and fat. This can help you perform

at a higher intensity for a longer period. Good sources of B-vitamins include whole and enriched grains, beans, dark leafy green vegetables, oranges, and bananas. Vitamin C is also a common water-soluble vitamin.

Although fat-soluble vitamins aren't directly important for energy production, they are important for other functions such as vision, bone health, and skin health. Vitamin A, D, E, and K are fat-soluble vitamins. Some good sources of fat-soluble

vitamins include carrots, dark leafy green vegetables, nuts and seeds, and avocados.

Maximize vitamin intake by:

- Eating a wide variety of colorful fruits and vegetables
- Not overcooking vegetables (longer cooking time lowers vitamin content)
- Steaming or microwaving your vegetables instead of boiling them (when boiling vegetables, many of the vitamins are lost in the water)



What are minerals?

Minerals are similar to vitamins in that they are needed to maintain several bodily functions and come from various plant-based foods. Minerals can be broken down into macro- and micro-minerals. All this means is you need to consume larger amounts of macro-minerals. Macro-minerals include calcium, phosphorus, magnesium, sodium, chloride, and potassium, otherwise known as electrolytes. Some important micro-minerals for athletic performance are iron, zinc, and selenium.

How can minerals help my athletic performance?

Calcium is important for bone health and muscle contraction. Having enough calcium can help prevent bone fractures or other serious injuries. Fruit and vegetable sources of calcium include dairy products, legumes, and dark green vegetables. Some foods have calcium added to them such as orange juice, almond milk and soy milk.

Electrolytes are important for water balance and nerve function. This can increase your athletic performance by preventing dehydration, which can cause fatigue, cramping, and dizziness during athletic activity. Good sources of electrolytes include sports drinks and dark leafy green vegetables. However, consumption of sport drinks should be limited to during or immediately after athletic performance.

The micro-mineral iron is important for delivering oxygen to the muscles. This decreases fatigue and improves endurance. Iron is the most common deficiency that athletes experience. Good fruit and vegetable sources of iron are beans, dark leafy greens, and dried fruit. To increase absorption of iron, eat these with a good source of vitamin C such as citrus fruits.

Zinc, a micro-mineral, is important for energy production and wound healing. Adequate intake of zinc can help increase recovery from intense exercise. Good plant sources of zinc include whole grains and nuts.

Selenium, another micro-mineral, is an antioxidant. It can help decrease recovery time

after an intense exercise. Food sources of selenium include whole grains and nuts.

Why are fruits and vegetables important?

Fruits and vegetables provide essential vitamins and minerals that are needed to maintain normal bodily functions. Not consuming vitamins and minerals on a daily basis can decrease athletic performance and may even lead to health problems.

How many fruits and vegetables should I eat?

Current recommendations are to consume at least five servings of fruits and vegetables daily. However, athletes may require increased consumption due to the demands of rigorous training, so five per day should be a minimum.

References

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- USDA (2015). Dietary guidelines for Americans 2015-2020. USDA. Washington DC.