

Vitamins and minerals serve hundreds of functions in the human body. We can't live without them! Fortunately, vitamins and minerals are found in a wide variety of foods. Can you get the nutrients you need for training and competition from the foods you eat?

Yes! The key is to eat enough and to make healthy choices for your meals and snacks. Canada's Food Guide at www.myfoodguide.ca is an excellent starting point for a healthy eating plan for athletes. However, you may need to eat more servings from each of the four food groups to get enough energy, vitamins and minerals to support your training. The following nutrients are of special concern for athletes. Athletes should make sure they get enough of these nutrients:

Iron

Iron is critical for athletes because it helps the body use and carry oxygen to active muscles. You may need more if you train hard. Iron deficiency can lead to anemia, fatigue, low motivation and can increase your risk of getting sick.

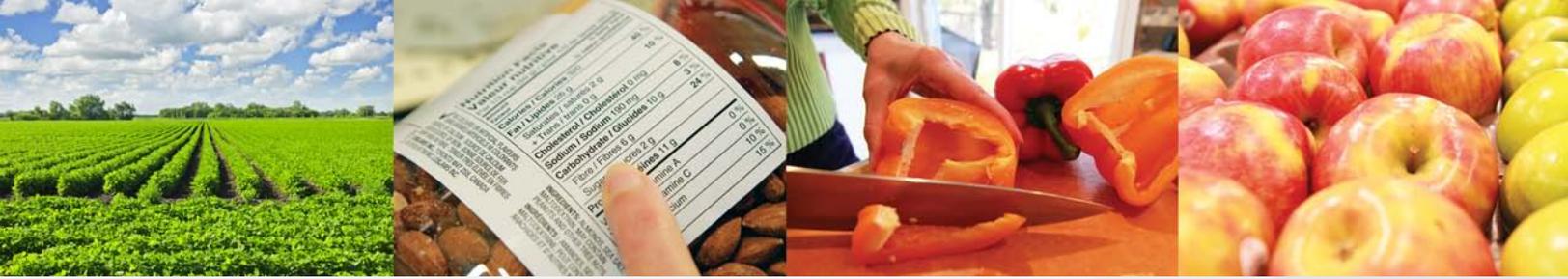
For a healthy iron status:

- Athletes, especially women, teens, distance runners and vegetarians, should have their iron checked periodically by their doctor. Taking iron supplements without having your blood checked first is not a good idea. Too much iron from supplements can be toxic.
 - Make sure you eat enough iron rich foods every day. Iron is found in:
 - Meat, poultry and fish – The iron in these foods is absorbed best.
- Beans, lentils, seeds, soy, whole grain or fortified cereals, breads and pastas – Iron from plant sources is not well absorbed, so include a source of vitamin C like citrus fruit and juices, strawberries, bell peppers or broccoli to help your body absorb the iron.

B-vitamins

B vitamins are needed for releasing energy in your body, building and repairing tissues and for healthy red blood cells. There is some evidence that athletes may need higher amounts of B vitamins; however, eating foods from all four food groups and getting enough calories will ensure that you meet those needs.

B vitamins are found in a wide variety of foods including some whole grains and fortified grain products, meat, fish, poultry, milk products, legumes and some vegetables such as mushrooms, potatoes and leafy green vegetables.



Vitamin B12 is only found in foods of animal origin such as meat, poultry, fish, eggs and milk products. If you don't eat any animal products, include foods fortified with vitamin B12 such as soy beverage and meat substitutes (veggie dogs, veggie burgers).

Antioxidants: Vitamins C, and E, beta carotene and selenium

There are a variety of antioxidants that help protect your body's cells from damage. You can get antioxidants from nutrient-rich foods, especially plant foods like vegetables, fruit, nuts, whole grains and legumes.

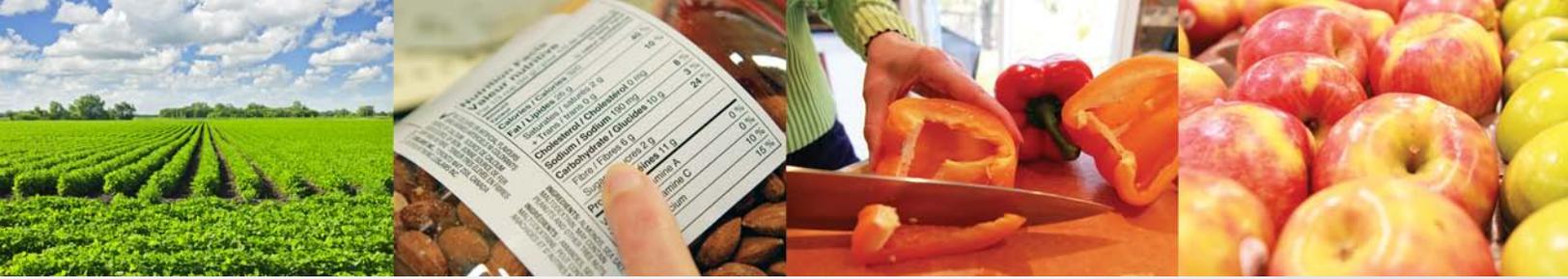
To get your antioxidant nutrients, choose food first:

- **Beta-carotene** is found in brightly coloured vegetables and fruit like carrots, apricots, pumpkin and sweet potatoes.
- **Vitamin E** is found in vegetable oils, avocado, wheat germ, nuts and seeds.
- **Vitamin C** is found in many vegetables and fruit such as citrus, strawberries, bell peppers, tomatoes and broccoli. Choose vitamin C-rich foods often as strenuous and prolonged exercise can increase your vitamin C needs.
- **Selenium** is found in meat, fish and poultry, milk and milk alternatives such as cheese and yogurt, whole grains, mushrooms, nuts, seeds and legumes

Athletes should not take supplements to get antioxidants; in fact, antioxidant vitamin supplements may be harmful.

Calcium and Vitamin D

Calcium and vitamin D are important for healthy bones, teeth, muscles, nerves, and hormone function. Vitamin D also helps keep your immune system healthy. Choose foods rich in calcium and vitamin D to ensure you meet your needs.



Calcium is found in milk and milk alternatives such as yogurt, cheese and fortified plant-based beverages such as fortified soy beverage. You can also get calcium from dark green vegetables such as kale and fish with soft bones that are eaten such as canned salmon and sardines.

Vitamin D is found in a limited number of foods. Only egg yolks and fatty fish such as salmon, mackerel and tuna naturally contain good amounts of vitamin D. Cow's milk and margarine are fortified with vitamin D. Other food sources include fortified plant-based beverages (e.g. fortified soy beverage), fortified orange juice and some yogurts and cheeses made with vitamin D-fortified milk.

Vitamin D is also made when the sun hits bare skin. In the late fall and winter in Canada, we can't make enough vitamin D from the sun. If you train indoors most of the time, including during the summer, and don't eat Vitamin D fortified foods, you may be "at risk" for low vitamin D. Health Canada recommends consuming 500mL (2 cups) of milk or fortified soy beverage every day to help meet vitamin D needs.

Dairy products or fortified soy beverages, canned salmon, sardines and some fortified orange juices provide both calcium and vitamin D.

The Bottom Line

Athletes may have greater needs for some nutrients. If you get enough energy (calories) from food and eat a variety of foods from the four foods groups, you should be able to meet most of your nutrient needs. Iron may be an exception. If you restrict your calories, or don't eat foods from one or more food groups, then you may need to take a daily multivitamin. See a Registered Dietitian who specializes in sports, or other sports health professional, to assess your personal vitamin and mineral needs.



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