



Vegetarian Nutrition

a dietetic practice group of the
eat right. Academy of Nutrition and Dietetics

RD Resources for Consumers:

Sports Nutrition for Vegetarians

Optimal exercise training and performance depend on good nutrition.

For optimal performance, the athlete's diet should contain mostly whole or minimally processed foods and be high in carbohydrate, low to moderate in fat and adequate in protein, vitamins, minerals and fluid. A vegetarian diet easily meets these requirements and may offer additional health and even some performance advantages. For example, vegetarian diets are linked to decreased risk for chronic diseases including cardiovascular disease, type 2 diabetes, and certain cancers, while their naturally high carbohydrate and phytochemical content may help athletes optimize their training, performance and recovery. The key is choosing a variety of whole- and minimally-processed grains and cereals, fruit, vegetables, legumes, soy products, nuts and seeds, and if desired, dairy and eggs.

Carbohydrate: The Fuel of Choice

Carbohydrate should make up the bulk of the athlete's diet. Carbohydrate is needed to feed our muscles and brain. Research shows that carbohydrate—which is converted to instant fuel—helps athletes perform their best. A vegetarian diet is naturally carbohydrate-rich with whole grains, pasta, rice, bread, cereal, vegetables (including high starch vegetables like corn, winter squash and sweet potatoes), and fresh and dried fruit. All of these carbohydrates should be a part of an athlete's diet.

Carbohydrate is stored in our muscles and liver in a starch-like form called "glycogen." Both glycogen stores and carbohydrate eaten before exercise supply energy. Fat is also used for energy during exercise but because it cannot supply energy fast enough, it is not a good source of fuel for high-intensity exercise. Starting exercise with more stored glycogen, from previous carbohydrate-rich meals, can delay fatigue. Carbohydrate-packed whole foods also provide fiber, protein, vitamins, and minerals.

Dietary Fat

Fat serves as an important fuel for low-intensity and prolonged exercise, and is necessary for overall health. Pre-exercise meals, however, should not be heavy in fat as it slows digestion. Dietary fat should be eaten in the right balance with carbohydrate and protein, as too much fat can replace needed carbohydrate calories. Athletes should follow the same guidelines recommended for Americans and consume between 20 and 35% of total daily calories from fat. Saturated or highly-processed trans fat should be limited as these fats can raise "bad" LDL cholesterol levels and increase risk for heart disease, even in athletes. High-fat diets (>60%) are not advised even after fat adaptation and may impair performance during high-intensity exercise. An easy way to balance fat and carbohydrates is to add small amounts of plant-based fat sources like nuts, seeds, avocado, olives, olive oil, canola oil, and soy foods to carbohydrate foods.

Protein

Intense or prolonged exercise increases protein needs because protein is needed to build muscle and to repair small muscle tears that happen during exercise. Vegetarian athletes can easily meet protein needs as long as the diet meets energy (calorie) needs and contains a variety of protein-rich plant foods such as legumes, soy foods, nuts, seeds and whole grains. Egg and dairy foods can be included as desired. Vegetarian athletes who restrict calories to lose weight should include protein-rich foods at most meals. All athletes should eat a snack or meals rich in protein and carbohydrates after hard training to enhance recovery and replace glycogen stores. Recommendations for endurance and strength-trained athletes range from 1.2-2.0 g/kg body weight per day. Example: an athlete weighing 75 kg (or 165 pounds) would need a range of 90-150 grams of protein per day.

Other Nutrients

B vitamins

Regularly eating legumes and whole- or enriched-grain products helps meet the requirement for the B vitamins. Vegan athletes avoiding animal foods should take a B12 supplement or eat B12-fortified foods (such as soy or rice milk, meat analogs, breakfast cereals or Red Star®Vegetarian Formula nutritional yeast).



Antioxidant vitamins

A varied diet with fruit, vegetables, nuts, seeds and whole grains provides antioxidants—vitamins C, E and beta-carotene—as well as phytochemicals. Many antioxidants and phytochemicals reduce damage to muscle and other tissue and enhance recovery after exercise. Vegetarians eat more plant foods, therefore can be expected to consume more phytochemicals.



Calcium

Calcium builds healthy bone and muscles. Fortified soy or rice milk, calcium-set tofu, fortified fruit juice, collards, broccoli, kale, mustard greens, turnip greens, milk, cheese, yogurt, dried figs, and blackstrap molasses are good calcium sources that are easy to pack into an active lifestyle.



Vitamin D

Vitamin D is needed for healthy bones and a healthy immune system. Athletes who live in northern latitudes, train indoors, or use sunscreen may lack vitamin D. In colder months (or year round for those with limited sunlight exposure) vitamin D-fortified foods and a vitamin D supplement are encouraged. Experts recommend 1000 to 2000 IU per day of vitamin D3 or vitamin D2 (vegan vitamin D). Spending just 10-30 minutes outside in exercise shorts several times a week will let athletes make enough vitamin D in their body. Lighter-skinned athletes may require only about 10 minutes whereas darker-skinned athletes may need up to 30 minutes.



Iron

Iron carries oxygen in the blood to exercising muscles. Poor performance results from low iron stores. Vegetarian athletes can meet their iron needs without supplements if they choose iron-rich plant foods daily. These foods include legumes, dark green vegetables, prunes, blackstrap molasses, and enriched breads. Combining these with foods high in vitamin C, such as tomatoes, citrus fruit, melon, kiwifruit, broccoli, or peppers, boosts iron absorption from plant-based sources. Avoid tea with meals or large servings of whole wheat crackers and unleavened whole grain breads as these contain “phytate” which decreases iron absorption. A wise tip—cooking in cast iron skillets adds iron to certain foods like tomato sauce.



Water, Electrolytes and Carbohydrates Before, During and After Exercise

Knowing fluid losses is important because we do not always feel thirsty during exercise. Dehydration and over-hydration both decrease performance and can be dangerous. Although drinking plain water is fine for most sporting events, beverages containing carbohydrates and electrolytes, including sports drinks and diluted fruit juice with a pinch of salt, can help maintain fluid balance and may even increase exercise performance. Try the following method to determine the right amount of fluid to consume during and after prolonged exercise: weigh yourself before and after exercise. For every pound lost, drink 2 cups of fluid. Remember, thirst is a faulty way to check dehydration. Drinking to ensure your urine is pale yellow (should look like lemonade, not apple juice) is another helpful tip.

Concluding Guidelines

To recap the health and possible performance advantages of a vegetarian diet, remember to select a diet containing a variety of mostly whole and minimally processed vegetarian foods which should include whole grains, pasta, rice, whole-grain bread, cereal, quinoa, fruit, vegetables, legumes, nuts and seeds, and if desired, dairy products and eggs.

References for this resource are available at <https://vndpg.org/sports-nutrition-references/>

A registered dietitian nutritionist can help you develop a healthy vegetarian eating plan that meets your needs. To find an RDN in your area, visit <http://www.eatright.org/find-an-expert>