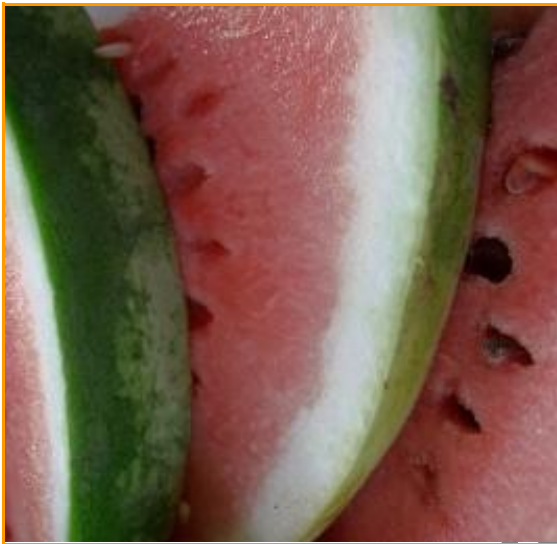




The Healthy Vegetarian Athlete

There are numerous reasons why athletes choose to follow a vegetarian diet, including ecological, economical, humanitarian and health. Regardless of why athletes choose to become or remain vegetarians, the various health benefits have been well documented and include:



- Reduced risk of coronary artery disease
 - Lower average blood cholesterol levels (total and LDL)
 - Lower blood pressure
 - Lower obesity– hover around ideal body weights
 - May help reverse the effects of atherosclerosis once they have occurred
 - Less digestive disorders (constipation and diverticulosis)
 - Reduced risk of Type II diabetes (adult-onset)
 - Reduced risk of gallstones
- Improved control of blood sugar (may be due to high fiber in diet)
 - Lower risk of various cancers– colon, lung and breast– than the average American

Note that some of these health benefits, attributed to what vegetarians eat, may accrue from how they live. Athletes exercise more than the average person and are less likely to be overweight. Many athletes abstain from tobacco and drugs and limit their alcohol intake as well. Nevertheless, a vegetarian diet is usually high in fiber, low in fat and cholesterol and rich in antioxidants, phytonutrients and other important nutrients.

Despite the lengthy list of benefits attributed to following a vegetarian diet, there are various myths that still persist with regards to its appropriateness for athletes. Below are some myths and truths surrounding vegetarian athletes.

Myth: A diet of a vegetarian athlete which emphasizes plant foods, in order to enhance carbohydrate intake and optimize body glycogen stores, may lead to increases in dietary fiber and phytic acid intake to concentrations that reduce the bioavailability of several nutrients, including zinc, iron, and some other trace minerals.

Truth: There is no convincing evidence that vegetarian athletes suffer impaired nutrient status from the interactive effect of their heavy exertion and plant-food based dietary practices to the extent that performance, health, or both are impaired. In general, athletes take in higher calories to meet the physical demands of their sport and are therefore, less likely to have low nutrient intakes.



Myth: Vegetarian athletes can not take in adequate protein intake.

Truth: Data indicate that all essential and nonessential amino acids can be supplied by plant food sources alone as long as a variety of foods is consumed and the energy intake is adequate. Including a variety of soy and soy products, nuts, beans and lentils (low fat dairy and fish, if preferred) is important for an adequate protein intake.

Myth: Vegetarian female athletes are at increased risk for oligomenorrhea (abnormally slight or infrequent menstrual flow).

Truth: Evidence suggests that low energy intake, not dietary quality, is the major cause of irregular menses. Taking in adequate calories and a variety of foods is important for normal menses.

When athletes choose vegetarian diets, they must plan with care, to be sure that they are taking in adequate nutrients, including total calories, protein, the B vitamins, iron, zinc, calcium, vitamin D and omega 3 fatty acids. Depending on how restrictive the athlete is (see chart on Types of vegetarians), the more important it becomes for an athlete to plan to *choose* the right foods, rather than just *omit* the foods they do not wish to eat. See the vegetarian food source chart for food sources of some nutrients important to vegetarian athletes.

In conclusion, although some concerns have been raised about the nutrient status of vegetarian athletes, a varied and well-planned vegetarian diet is compatible with any successful athletic endeavor. The key word to remember with food intake is variety. Including a wide range of fruits, vegetables, whole-grain breads and cereals, legumes, nuts and seeds in the diet will result in optimal performance.

Types of vegetarians

Vegan: avoids all foods of animal origin

Lacto-ovo-vegetarian: eats dairy and eggs, but no animal flesh

Lacto-vegetarian: eats dairy, but no eggs or animal flesh

Ovo-vegetarian: eats eggs, but no dairy or animal flesh

Pesco-vegetarian: eats eggs, dairy and fish, but no animal flesh

Flexitarians: a newly described term which include the groups below:

Vegetarian: Those who say they are vegetarian, or "almost vegetarian," but eat some meat, poultry or fish.

Vegetarian-inclined: Replace meat with meat alternatives for at least some meals, usually maintain a vegetarian diet, or eat four or more meatless meals per week.

Health-conscious: Strive for a balanced eating plan or eat two to three meatless meals per week.

Vegetarian food sources

Riboflavin (vitamin B-2)

Vegan Sources: Broccoli, asparagus, tofu, almonds, yeast, soy milk

Non vegan sources: milk and cheese



B-12 (cobalamin)

Vegan Sources: naturally found in animal products only, but also in fortified soy milk, cereals, imitation meats (check labels), and supplements, some is also made by our intestinal bacteria.

Non-Vegan Sources: Milk, cheese

Vitamin D

Vegan Sources: exposure to sun—the body synthesizes it, or in a supplement

Non-Vegan Sources: Milk, margarine, eggs

Calcium

Vegan Sources: Orange, peanuts, great northern, beans, tofu, molasses, rhubarb, turnip greens, kale, chickory greens, broccoli, green beans

Non-Vegan Sources: cheese, milk, yogurt, oysters, salmon, sardines.

* Exceptions are spinach, chard, beet greens and sorrel; they contain calcium but also have oxalic acid which binds calcium and makes it unusable. Many juices are now calcium fortified. If you take a supplement, split the dose in 2 or 3 smaller doses per day. Large doses are not absorbed as efficiently as small doses.

Iron

Sources:

- Non-heme iron is found in plants and 8% of what we eat is absorbed, if eaten with a good source of vitamin C (citrus fruits, tomato products, red pepper). In addition, using iron pans can boost the iron content of foods.

Sources: Wheat germ, peanut butter, tofu, lentils, chickpeas, kidney beans, pinto beans, spinach, kale, broccoli, green peas, whole wheat bread.

- Heme iron found in animal food has an absorption efficiency of about 23%.

Sources: Fish

* Note: Coffee, tea, herb tea, soy protein, bran, high fiber foods, egg yolks, phytate and calcium supplements impair iron absorption. You will get less iron if you consume any of these from 15 minutes before to an hour after you eat a food containing iron.

Zinc

Sources: Wheat germ, peanut butter, tofu, lentils, chickpeas, kidney beans, pinto beans, potato, spinach, kale, broccoli, green peas, whole wheat bread, yogurt.

* Note: Phytates—found in most whole grains and some fruits and vegetables inhibit zinc absorption

Omega 3-s

Sources: flaxseed, canola oil, nuts, and wheat germ.