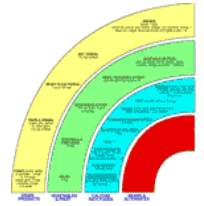


# Vegetarian Nutrition

Vegetarians can rest assured. Plant-based foods are loaded with nutrients including ample **protein, iron, calcium, vitamin D, zinc, iodine, and omega-3's**. Vegans require a reliable source of **vitamin B12**. Whether you eat a vegetarian or non-vegetarian diet, the key to health is simple. Include a wide variety of different foods in your diet – no one food source is nutritionally complete by itself.



**V**egetarians choose foods from grains, vegetables, legumes, nuts, seeds and fruits. Whole unrefined foods are best. Eggs and dairy are optional. On a plant-based diet, you will have the distinct advantage of obtaining nutrients from sources high in fibre, and low in saturated fat and cholesterol.

## Protein

Most people can easily meet their protein needs by eating a variety of whole grains, legumes, and vegetables on a daily basis. Although there is somewhat less protein in a vegetarian diet, this is actually an advantage, as excess protein has been linked to heart disease, cancer, kidney disease and osteoporosis. Foods high in protein include tofu, tempeh, beans, nuts, seeds, soy milk, some vegetables (such as broccoli, asparagus, spinach, snowpeas, Brussels sprouts), eggs, and dairy products. Also see “Protein Myth” below.

## Iron

Only about one fifth of the iron in a standard diet comes from meat. Dairy products are deficient in iron. The richest plant sources are dark green vegetables, soy products and legumes, whole grains, dried fruits, nuts, seeds, and unrefined molasses. Cooking with cast-iron pots also contributes to dietary intake. Adding fruits and vegetables high in vitamin C to your meals (such as citrus, peppers, cabbage, broccoli, kale or tomatoes) enhances iron absorption. Foods that decrease

absorption include: tea, coffee, milk products, spinach, rhubarb, Swiss chard and chocolate.

## Calcium

Dairy products are high in calcium, but needs can also be met on a well-planned vegan diet. Rich plant food sources include dark green vegetables such as broccoli, bok choy and kale, beans, tofu (made with calcium), tahini, sesame seeds, almonds, figs, seaweeds, unrefined molasses, and fortified soy milks. Since the consumption of animal protein increases calcium requirements, a person following a vegan diet may have much lower needs. Although some plant foods contain oxalates and phytate which can inhibit calcium absorption, the calcium in plant foods is generally well absorbed.

## Vitamin D

This vitamin is essential for the absorption of calcium and is formed in the presence of direct or indirect sunlight. Your body stores vitamin D during the summer for winter use. On average, about 10 to 15 minutes a day of sun on the face and hands for light-skinned people should suffice. Darker-skinned people, the elderly, and those at higher latitudes may need more sun exposure. Sunscreen lotion rated SPF 8 or above prevents vitamin D synthesis. Dairy products and some soy milks are fortified with vitamin D. People getting insufficient sun or not eating fortified foods should consider taking a daily multiple vitamin with 400 IU of vitamin D.

...continued on back

## Vegetarian Position Paper Dietitians Of Canada

- Vegetarians have been reported to have healthier body weight than non-vegetarians, as well as lower rates of death from heart disease, lower blood cholesterol levels and lower rates of high blood pressure, type 2 diabetes and prostate and colon cancer.
- The paper reviews the current scientific data related to key nutrients for vegetarians, including protein, iron, zinc, calcium, vitamin D, riboflavin, vitamin B<sub>12</sub>, vitamin A, omega-3 fatty acids, and iodine. A vegetarian and vegan diet can meet current recommendations for all of these nutrients.
- Well-planned vegan and other types of vegetarian diets are appropriate for all stages of the life cycle (including pregnancy, lactation, infancy, childhood, adolescence, and old age).
- An accompanying *Vegetarian Food Guide* focuses on nutrients of particular interest in plant-based diets.

[www.veg.ca/living/veg-position-paper.html](http://www.veg.ca/living/veg-position-paper.html)

# Protein Myth

Physicians Committee for Responsible Medicine

**P**rotein is an important nutrient required for the building, maintenance, and repair of tissues in the body. Amino acids, the building blocks of protein, can be synthesized by the body or ingested from food. A variety of grains, legumes, and vegetables can provide all of the essential amino acids our bodies require.

It was once thought that various plant foods had to be eaten together to get their full protein value, otherwise known as protein combining or protein complementing. Intentional combining is not necessary to obtain all of the essential amino acids.<sup>1</sup> As long as the diet contains a variety of grains, legumes, and vegetables, protein needs are easily met.

## Protein Requirements

With the traditional Western diet, the average person consumes about double the protein her or his body needs. Additionally, the main sources of protein consumed tend to be animal products which are also high in fat and saturated fat. Most individuals are surprised to learn that protein needs are actually much less than

what they have been consuming.

Protein needs are increased for women who are pregnant or breastfeeding. In addition, needs are also higher for active persons. As these groups require additional calories, increased protein needs can easily be met through larger intake of food consumed daily.

## The Problems with High-Protein Diets

High protein diets for weight loss, disease prevention, and enhanced athletic performance have been greatly publicized over recent years. However, these diets are supported by little scientific research. Studies show that the healthiest diet is one that is high-carbohydrate, low-fat, and moderate in protein. Increased intake of whole grains, fruits, and vegetables are recommended for weight control<sup>3</sup> and preventing diseases such as cancer<sup>4</sup> and heart disease.<sup>5</sup> High-carbohydrate, low-fat, moderate-protein diets are also recommended for optimal athletic performance.<sup>6</sup> A diet high in protein can actually contribute to disease and other health problems.

...continued on back



**Becoming Vegetarian** and **Becoming Vegan** are two of the best resource books

available. They cover the reasons behind the trend toward a plant-based diet, the scientific evidence in favour of vegetarianism and nutrition concerns such as protein, calcium, iron, zinc, vitamin B<sub>12</sub> and D. Written by Canadian dietitians. **\$29.<sup>50</sup> each**

## Zinc

Zinc is readily available in many plant foods such as whole grains (breads, pasta, rice), wheat germ, millet, quinoa, tofu, tempeh, miso, legumes, sprouts, nuts and seeds, as well as eggs and dairy products.

## Iodine

Regular iodized table salt is fortified with plenty of iodine, but if you use sea salt instead, be sure your diet includes a reliable source. Sea salt contains very little iodine. The best sources are seaweed, vegetables grown near the ocean, and supplements. Also some breads use dough stabilizers that contain iodine. Iodine is needed for the normal metabolism of cells.

## Omega-3 fatty acids

ALA (Alpha-linolenic acid) is found mainly in the oil of flaxseeds, hemp seeds, walnuts, rapeseed (canola oil), and soybeans. ALA reduces blood clotting, and is good for the heart. The body converts some of the ALA into two other essential omega-3 fats called EPA and DHA. These two are also found to a small degree in seaweeds, and there are vegan DHA supplements available made from micro-algae. Low levels of DHA have been associated with depression. A tablespoon of ground flaxseeds or a teaspoon of flax oil per day will meet the needs of most people.

## Vitamin B<sub>12</sub>

Very low B<sub>12</sub> intakes can cause anemia and nervous system damage. Meat-eaters acquire B<sub>12</sub> through micro-organisms living in the animal flesh they eat. Lacto-ovo vegetarians receive B<sub>12</sub> through eggs and

## Protein Myth continued...

**Osteoporosis.** Diets that are rich in protein, especially animal protein,<sup>7</sup> are known to cause people to excrete more calcium than normal through their urine and increase the risk of osteoporosis. Plant-based diets provide adequate protein, and calcium (see reverse side) that can help protect against osteoporosis.

**Cancer.** Although fat is the dietary substance most often singled out for increasing one's risk for cancer, animal protein also plays a role. Specifically, certain proteins present in meat, fish, and poultry, cooked at high temperatures, especially grilling and frying, have been found to produce compounds called heterocyclic amines. These substances have been linked to various cancers including those of the colon and breast.<sup>8-10</sup> A diet rich in whole grains, fruits, and vegetables is important in decreasing cancer risk.<sup>4</sup>

**Kidney Disease.** When people eat too much protein, it releases nitrogen into the blood or is digested and metabolized. This places a strain on the kidneys which must expel the waste through the urine. Kidney problems may result in individuals who are susceptible to disease.

**Cardiovascular Disease.** Diets high in fat and saturated fat can increase one's risk of heart disease. High-protein diets often encourage consumption of meat, eggs, and dairy products, which are all high in cholesterol, fat, and saturated fat. The most popular of the high-protein diets have been described as containing excessive amounts of these artery-clogging products.<sup>11</sup> Adequate protein can be consumed through a variety of plant products which are cholesterol-free and contain only small amounts of fat.

dairy products. The only reliable vegan sources of B<sub>12</sub> are foods fortified with B<sub>12</sub> (including some rice and soy milks, and some breakfast cereals), B<sub>12</sub> supplements and some multi-vitamins. In the past some non-animal items such as spirulina, tempeh, miso, and soil were considered as possible sources, but these have proven to be unreliable. In the absence of any apparent dietary supply, deficiency symptoms usually take five years or more to develop in adults, though some people experience problems within a year. Long term studies of vegans have detected a very low rate of B<sub>12</sub> deficiency. Some people (including meat-eaters) have problems absorbing B<sub>12</sub>. It's especially important for women to ensure adequate B<sub>12</sub> intake when pregnant or breastfeeding.

All other essential vitamins, minerals, fats and carbohydrates are widely found in the plant kingdom. These nutrients can be easily obtained by maintaining variety in a plant food diet.

If you have difficulty adapting to a vegetarian diet it may be that your body needs a few months to adjust and detoxify. Try experimenting with a variety of foods and cooking methods. If you have concerns about a nutrient deficiency, you can always have your blood tested, but rest assured that a varied vegetarian diet lacks no nutrients and is proven to be a powerful health promoting choice. Bon appetit!

See [www.veg.ca/living](http://www.veg.ca/living) for more information, updates and links.

Reviewed by Anne-Marie Roy R.D.

*“Appropriately planned vegetarian diets are healthful, nutritionally adequate, and provide health benefits in the prevention and treatment of certain diseases.”*

— Dietitians Of Canada

### Dietary double standard?

When a non-vegetarian gets sick, people assume it's because of stress, overwork, germs, lack of sleep or just chance; but if a vegetarian comes down with the same illness, often it gets wrongly blamed on their diet.

**Toronto Vegetarian Association**  
Charitable #11926 7532RR 0001

17 Baldwin St., 2nd Fl.  
Toronto ON M5T 1L1  
veg.ca tva@veg.ca  
416-544-9800  
Fax 416-544-9094

**Weight Loss Sabotage.** Many individuals see almost immediate weight loss as a result of following a high-protein diet. In fact, the weight loss is not a result of consuming more protein, but by simply consuming less calories. As with any temporary diet, weight gain is often seen when previous eating habits are resumed. To achieve permanent weight loss while promoting optimal health, the best strategy is a low-fat diet of grains, legumes, fruits, and vegetables combined with regular physical activity.

### Protein Checklist

High protein diets are unhealthy. However, adequate amounts of protein to maintain body tissues, including muscle, are still important and can be easily achieved on a vegetarian diet. The following guidelines can help you to meet (but not exceed) your daily needs.

- **Grains – aim for 5 or more servings.** This may include 1/2 cup of hot cereal, 1 oz. of dry cereal, or 1 slice of bread. Each serving contains roughly 3 grams of protein.

- **Vegetables – aim for 3 or more servings.** This may include 1 cup of raw vegetables, 1/2 cup of cooked vegetables, or 1/2 cup of vegetable juice. Each serving contains about 2 grams of protein.

- **Legumes – aim for 2 to 3 servings.** This may include 1/2 cup of cooked beans, 4 oz. of tofu or tempeh, 8 oz. of soy milk, and 1 oz. of nuts. Each serving may contain about 4 grams to 10 grams of protein. Meat analogues and substitutes are also great sources of protein that can be added to your daily diet.

This article has been edited for length. To view the full version go to [www.pcrm.org/health/Info\\_on\\_Veg\\_Diets/protein.html](http://www.pcrm.org/health/Info_on_Veg_Diets/protein.html)

1. Position of the American Dietetic Association: vegetarian diets. J Amer Diet Assoc 1997;97(11):1317-21. [www.eatright.org/adap1197.html](http://www.eatright.org/adap1197.html)
2. Munoz de Chavez M, Chavez A. Diet that prevents cancer: recommendations from the American Institute for Cancer Research. Int J Cancer Suppl 1998;11:85-9.
3. Position of the American Dietetic Association: weight management. J Amer Diet Assoc 1995;95:809.
4. World Cancer Research Fund. Food, Nutrition and the Prevention of Cancer: A Global Perspective. American Institute for Cancer Research. Washington, D.C.: 1997.
5. Ornish D, Brown SE, Scherwitz LW. Can lifestyle changes reverse coronary heart disease? Lancet 1990;336:129-33.
6. Position of the American Dietetic Association: nutrition for physical fitness and athletic performance for adults. J Amer Diet Assoc 1993;93:691.
7. Zemel MB. Calcium utilization: effect of varying level and source of dietary protein. Am J Clin Nutr 1988;48:880-3.
8. Potter JD. Nutrition and colorectal cancer. Cancer Causes Control 1996;7(1):127-46.
9. Giovannucci E, Goldin B. The role of fat, fatty acids, and total energy intake in the etiology of human colon cancer. Am J Clin Nutr 1997;66(suppl):1564S-71S.
10. De Stefani E, Ronco A, Mendilaharsu M, et al. Meat intake, heterocyclic amines, and risk of breast cancer: a case-control study in Uruguay. Cancer Epidemiol Biomark Prev 1997;6:573-81.
11. Titchenal CA, Dobbs JC, Hetzler RK. Macronutrient composition of The Zone diet based on computer analysis. Med Sci Sport Exer 1997;29(5):S126.

### PCRM

5100 Wisconsin Ave., N.W., Ste. 400  
Washington, DC 20016-4131  
T: 202-686-2210 F: 202-686-2216  
[pcrm@pcrm.org](mailto:pcrm@pcrm.org)