

HEALTHY FOOD CHOICES: VEGETARIAN STYLE

Vegetarian Eating

It is the position of the American Dietetic Association that vegetarian diets are healthful and nutritionally adequate when appropriately planned, and provide health benefits for the prevention and treatment of some diseases. It is estimated that 2.8-6% of adult Americans consume only vegetarian diets, and the popularity of vegetarian-type menus is expanding. A 2003 publication ("A New Food Guide for North American Vegetarians") referenced survey data suggesting that vegans comprise as much as 40% of the actual vegetarian population.

A person chooses to adopt a vegetarian diet for many reasons, including:

- health benefits
- ethical concerns
- economics
- ecological, religious and cultural influences
- aesthetics
- politics
- taste and variety

Vegetarianism Defined

A vegetarian diet is loosely defined as one that excludes meat, fish and fowl. It generally also excludes foods prepared with meat by-products including collagen and meat broths. Individuals following a vegetarian diet may have unique and personal preferences. There are sub-classes of vegetarians who abide by the following guidelines:

- **Semi-vegetarian:** meal patterns generally exclude meats such as pork, beef, and lamb, but may include occasional poultry and fish, along with dairy products and eggs.
- **Lacto-ovo-vegetarian:** individuals generally eat dairy products and eggs, but avoid eating the actual animal or animal by-product.
- **Lacto-vegetarian:** excludes the intake of eggs in addition to meats, fish and fowl
- **Vegan:** all foods with animal products are excluded, such as egg noodles or products made with milk and meat broths.

Health Benefits

The health benefits generally associated with avoiding meats and consuming more plant foods include:

- Lower blood pressure and fewer cases of chronic hypertension
- Lower rates of death from Ischemic Heart Attacks
- Lower incidence of obesity and related type 2 diabetes
- Lower incidence of colon, prostate and stomach cancers
- Lower serum cholesterol and lower saturated fat consumption

- Increased intake of carbohydrates, dietary fiber, magnesium, potassium, folate, antioxidants, including vitamins C and E, along with more phytonutrients
- Reduced risk of e-coli infections, although raw vegetables and fruits are still susceptible

Nutritional Considerations

Note: VEGANS are most prone to developing deficiencies in Calcium, Vitamin D, Iron, Riboflavin (B₂), and Vitamin B-12.

CALCIUM: Because plant proteins can impede absorption of calcium (due to the presence of phytates), it is advisable to be purposeful in obtaining daily calcium needs (adult needs range from 1000-1500 mg/day). Vegans can get their calcium from collard or turnip greens, kale, broccoli, tofu prepared with calcium, fortified soy milk, and supplements (calcium citrate form is better absorbed).

VITAMIN D: An adult who has been on a strict vegetarian diet long-term may experience greater-than-average dental decay and gum disease, largely attributed to insufficient intake of Vitamin D (teeth can become softer and more prone to decay) and calcium. Exposure to sunlight is a tried and true source of Vitamin D. The use of sunscreen that blocks ultraviolet radiation also blocks the UVB light that is needed to convert a cholesterol-type of compound in the skin to Pre-Vitamin D-3. Exposing extremities to the outdoors for an average of 15 minutes daily without UVB sunscreen will allow your body, in most cases, to produce adequate levels of vitamin D. Cloud cover and heavy pollution reduce UV energy, as does UVB sunscreen of 8 or higher. For more information, see: <http://ods.od.nih.gov/factsheets/vitaminD.asp>. Vitamin D levels can be assessed by your healthcare professional and supplementation taken as needed.

IRON: Vegetarians are not alone in their challenge to meet the body's iron needs through their meal choices. Fortunately, dietary iron absorption is enhanced by concurrent consumption of foods high in ascorbic acid (Vitamin C). Iron from plant sources (non-heme) may encounter some absorption interference from tannins in tea, insoluble dietary fiber, and phytates. The iron contained in fermented soy products such as tempeh, natto and miso is more useable by the body than other iron-containing plant foods.

RIBOFLAVIN (VITAMIN B₂): This B vitamin is important in energy metabolism, changing food energy to the ATP energy our bodies can use. Since the richest food sources of Riboflavin include meats, eggs, and dairy, vegans should try to include leafy and dark green vegetables, whole grains, mushrooms, almonds, and yeast extracts in their meals.

VITAMIN B-12: The only reliable unfortified sources of Vitamin B-12 in food are meats, dairy products and eggs. The B-12 in fermented plant products is currently assessed to be poorly absorbed. While the daily requirement for B₁₂ is very small, it is recommended that planning be made to include fortified soy milk and/or fortified cereals in the vegan diet. Otherwise, a Vitamin B₁₂ supplement is advisable.

PROTEIN: Consumption of proteins can meet the body's need for essential amino acids from both animal and plant sources. A mixture of proteins from unrefined grains, legumes, seeds, nuts, and vegetables will complement one another in their amino acid profile so that deficits in one are made up by another. Protein foods that complement one another should be eaten over the course of the day, but not necessarily at the same meal. Soybeans, in particular, contain a good complement of essential amino acids.

OMEGA-3 FATTY ACIDS: Although the vegetarian diet typically is generous in n-6 fatty acids, such as linolenic acid, studies have shown blood levels of omega-3 fatty acids to be lower in vegans and

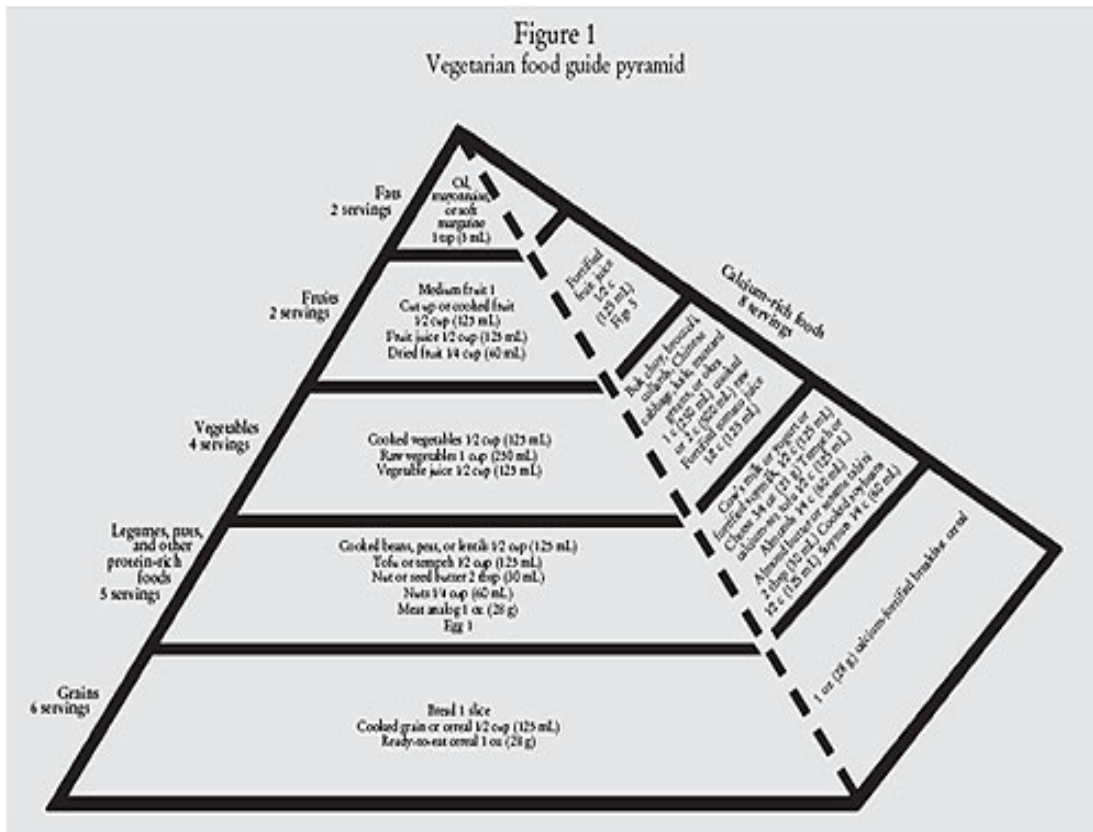
vegetarians than in the general population. It is advisable to regularly consume flaxseed oil and ground flaxseeds, as well as canola and soybean oils, soybeans, tofu and walnuts.

Specific Meal Planning Tips

- Servings of nuts and seeds may be used in place of servings of “fats”.
- For the best balance of fats, use olive, canola, soybean, and flaxseed oils.
- Include 2 servings each day that include omega-3 fatty acids. Examples of such servings: 1 tsp flaxseed oil; 3 tsp of canola or soybean oil; 3 tsp of ground flaxseed; ¼ c. walnuts. Legumes and nuts generally provide omega-3 fats, including walnuts and pumpkin seeds.
- One serving from the calcium-rich food group provides an estimated 10% of adult daily requirements.
- For vitamin D choose soymilk and breakfast cereals with vitamin D fortification. Try to obtain 15 minutes of unprotected sunlight on most days, since using an SPF 8 sunscreen with UVB can block vitamin D production in the skin by as much as 95%.
- Include at least 3 good food sources of Vitamin B₁₂ daily. Examples: 1 Tbsp of Red Star Vegetarian Support Formula nutritional yeast; 1 cup fortified soy milk; ½ c. cow’s milk; 1 ounce of fortified breakfast cereal; 1 large egg; ¾ c. yoghurt; or 1 ½ oz. of meat analog. Otherwise, taking a daily B₁₂ supplement of 5-10 micrograms B₁₂ is needed.

The New Food Guide for North American Vegetarians

A new food guide for vegetarians was published in 2003 to assist vegetarians in choosing diets that supply their nutrient needs with an accompanying food guide pyramid that is practical and useful.



Benefits of this new food pyramid:

- Increasing the awareness of non-dairy options for calcium
- Providing a guide that would meet the needs of people following differing types of vegetarian diets
- Including a wider variety of foods consumed by vegetarians
- Focusing on specific nutrients of interest for a healthy vegetarian diet.

This 3-dimensional pyramid picture illustrates how to meet 2 dietary needs simultaneously. For example, ½ c. calcium-fortified orange juice meets both 1 (of 8) calcium-rich serving and 1 fruit serving for the day. One cup of steamed broccoli can meet both 1 serving (of 8) of a calcium source and 2 servings of vegetables for the day.

Note: These pyramid guidelines are based upon the **minimum** servings recommended and provide 1400-1500 calories of energy, which will be insufficient for most active individuals. Consumers can meet higher energy needs by increasing the variety and servings of foods in the pyramid.

Additional Reading & Resources

- <http://ods.od.nih.gov/factsheets/vitamind.asp>
- <http://www.vrg.org/press/2003poll.htm>
- <http://www.vrg.org/nutrition/b12.htm> (Vitamin B-12)
- www.eatright.org/ (search: vegetarian diets)
- <http://www.agd.org/> (search: vegetarian diets)
- <http://www.mayoclinic.com/print/legumes/NU00260/METHOD=print>
- <http://www.vegfamilly.com/dietician/calcium-iron-absorption.htm> (2008)
- http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/governance_5105_ENU_HTML.htm
- http://www.dietitians.ca/news/downloads/Vegetarian_Food_Guide_for_NA.pdf