



Nutrition for Family Living

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ADA position paper on vegetarian diets

The American Dietetic Association and Dietitians of Canada have published an updated position paper on vegetarian diets stating "appropriately planned vegetarian diets are healthful, nutritionally adequate, and provide health benefits in the prevention and treatment of certain diseases." Below are the abstract and a summary of the key points from the sections on nutrients and vegetarian diets throughout the life cycle.

ABSTRACT

"... Approximately 2.5% of adults in the United States and 4% of adults in Canada follow vegetarian diets. A vegetarian diet is defined as one that does not include meat, fish, or fowl. Interest in vegetarianism appears to be increasing, with many restaurants and college foodservices offering vegetarian meals routinely. Substantial growth in sales of foods attractive to vegetarians has occurred, and these foods appear in many supermarkets. This position paper reviews the current scientific data related to key nutrients for vegetarians, including protein, iron, zinc, calcium, vitamin D, riboflavin, vitamin B-12, vitamin A, n-3 fatty acids, and iodine. A vegetarian, including vegan, diet can meet current recommendations for all of these nutrients. In some cases, use of fortified foods or supplements can be helpful in meeting recommendations for individual nutrients. Well-planned vegan and other types of vegetarian diets are appropriate for all stages of the life cycle, including during pregnancy, lactation, infancy, childhood, and adolescence. Vegetarian diets offer a number of nutritional benefits, including lower levels of saturated fat, cholesterol, and animal protein as well as higher levels of carbohydrates, fiber, magnesium, potassium, folate, and antioxidants such as vitamins C and E and phytochemicals. Vegetarians have been reported to have lower body mass indices than nonvegetarians, as well as lower rates of death from ischemic heart disease; vegetarians also show lower blood cholesterol levels; lower blood pressure; and lower rates of hypertension, type 2 diabetes, and prostate and colon cancer. Although a number of federally funded and institutional feeding programs can accommodate vegetarians, few have foods suitable for vegans at this time. Because of the variability of dietary practices among vegetarians, individual assessment of dietary intakes of vegetarians is required. Dietetics professionals have a responsibility to support and encourage those who express an interest in consuming a vegetarian diet. They can play key roles in educating vegetarian clients about food sources of specific nutrients,



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food purchase and preparation, and any dietary modifications that may be necessary to meet individual needs. Menu planning for vegetarians can be simplified by use of a food guide that specifies food groups and serving sizes.” J Am Diet Assoc. 2003;103:748-765.

NUTRIENTS OF CONCERN TO VEGETARIANS

Protein. It is possible to meet protein recommendations with a plant-based diet when a person eats a variety of plant foods and meets their energy needs. Eating a variety of plant foods over the course of a day will provide enough essential amino acids for healthy adults, so there is no need to eat complementary proteins at the same meal. Most vegetarians and vegans meet or exceed recommendations for protein.

Iron. Plant foods contain only non-heme iron, which is affected by other compounds in food that inhibit or enhance its absorption. Phytate, found in high fiber foods, inhibits absorption of iron. Vitamin C, found in citrus fruits and many vegetables, enhances absorption of iron. Non-heme iron is found in legumes, iron-fortified cereals and breads, especially whole wheat bread, whole grain products, tofu, spinach, and dried fruits. The rate of iron deficiency anemia is about the same in vegetarians and non-vegetarians.

Zinc. Zinc appears to be less bioavailable in vegetarian diets, and many vegetarians do not consume enough in food. However, zinc deficiency is rare and the effects of marginal intake are not well understood. Soaking and sprouting beans, grains, and seeds as well as leavening bread can increase zinc bioavailability. Supplements should be used only if advised by a doctor or registered dietitian.

Calcium. Calcium is present in many plant foods and fortified foods. Lacto-ovo vegetarians get about as much calcium as non-vegetarians, but vegans tend to consume less and often don't meet recommendations. The ratio of calcium to protein may predict bone health better than calcium intake alone. Lacto-ovo vegetarian diets have a high calcium-protein ratio that favors bone health (more calcium per gram of protein), while vegans have a lower ratio, more similar to non-vegetarians (less calcium per gram of protein). Calcium is found in tofu processed with calcium, fortified rice or soy beverages, broccoli, seeds, nuts, legumes, and some greens. Fortified cereals and orange juice are also good sources. Oxalates in greens, and phytates in grains, make calcium from these foods less available.

Vitamin D. Vitamin D status depends on sunlight exposure and intake of vitamin D fortified foods or supplements. Fortified foods include cow's milk, some brands of soy milk and rice milk, and some breakfast cereals and margarines. Vitamin D supplements are recommended if sun exposure and intake of fortified foods are not sufficient.

Vitamin B12. Unless fortified, no plant food contains significant amounts of active vitamin B12. Foods such as sea vegetables and spirulina may contain vitamin B12 analogs, but neither these nor fermented soy products can be counted on as reliable sources of active vitamin B12. Lacto-ovo vegetarians can get enough vitamin B12 from dairy foods and eggs if they consume these foods regularly. It is essential that all vegetarians use a supplement, fortified food, dairy products, or eggs to meet recommended intakes of vitamin B12.

Omega-3 fatty acids. Vegetarian diets tend to be high in n-6 (“omega 6”) fatty acids and low in n-3 (“omega 3”) fatty acids. This imbalance can inhibit production of the long chain n-3 fatty acids that are involved in brain and nervous system function. Vegetarians should include sources of n-3 fatty acids, such as canola oil, soy oil, flaxseed or flaxseed oil, soy, tofu, or walnuts. Fatty fish and eggs also supply n-3 fatty acids.



VEGETARIAN DIETS THROUGHOUT THE LIFE CYCLE

Well-planned vegan, lacto-vegetarian, and lacto-ovo vegetarian diets are appropriate for all stages of the life cycle, including pregnancy and lactation. Well-planned vegan, lacto-vegetarian, and lacto-ovo-vegetarian diets can satisfy the nutrient needs of infants, children, and adolescents and promote normal growth. Vegetarian diets in childhood and adolescence can aid in developing lifelong healthy eating patterns and can offer some important nutritional advantages. Vegetarian children and adolescents have lower intakes of cholesterol, saturated fat, and total fat and higher intakes of fruits, vegetables and fiber than non-vegetarians. Vegetarian children also tend to be leaner and to have lower serum cholesterol levels.

Infants. When vegetarian infants receive adequate amounts of breast milk or commercial infant formula and their diets contain good sources of energy and nutrients such as iron, vitamin B12, and vitamin D, growth throughout infancy is normal. Extremely restrictive diets such as fruitarian and raw foods diets have been associated with impaired growth and therefore cannot be recommended for infants and children.

- The breast milk of vegetarian women is similar in composition to that of non-vegetarians and is nutritionally adequate.
- Soy milk, rice milk, homemade formulas, cow's milk, and goat's milk should not be used to replace breast milk or commercial infant formula during the first year because these foods do not contain the proper ratio of macronutrients nor do they have appropriate micronutrient levels for the young infant.
- Guidelines for introducing solid foods are the same as for non-vegetarian infants.
- Breastfed infants whose mothers do not consume dairy products, foods fortified with vitamin B12, or B12 supplements regularly will need vitamin B12 supplements.

Children. Lacto-ovo vegetarian children grow similarly to non-vegetarian children. Good sources of calcium, iron, and zinc should be emphasized for vegetarian children. A reliable source of vitamin B12 is necessary for vegan children.

Adolescents. Vegetarian diets appear to offer some nutritional advantages for adolescents. Vegetarian adolescents consume more fruits and vegetables, and fewer sweets, fast foods, and salty snacks compared with non-vegetarian adolescents. Key nutrients for adolescent vegetarians include calcium, vitamin D, iron, zinc, and vitamin B12. Vegetarian diets are somewhat more common among adolescents with eating disorders. Research suggests adolescents may use a vegetarian diet to camouflage an existing eating disorder; no data suggests vegetarian diets *lead* to eating disorders.

Pregnant and lactating women. Vegetarian diets can meet the nutritional needs of pregnant and lactating women, and infants of vegetarian mothers usually have birth weights similar to those of infants born to non-vegetarian mothers. DHA (docosahexaenoic acid) is an n-3 fatty acid that plays a role in the development of the brain and eye. A dietary supply of DHA may be important for the developing fetus and newborn, so pregnant and lactating vegetarian women (if they do not consume eggs regularly) should include sources of the DHA precursor linolenic acid in their diet. Linolenic acid is found in ground flaxseed, flaxseed oil, canola oil, and soybean oil, or from vegetarian DHA supplements from microalgae.

Older adults. Vegetarian and non-vegetarian older adults may have diminished vitamin B12 absorption from food, however the form of vitamin B12 in fortified foods and supplements is usually well absorbed. Older adults can easily meet their protein needs on a vegetarian diet if a



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variety of protein rich plant foods are eaten daily. Vegetarian diets, which are usually high in fiber, can be beneficial for older adults to prevent constipation.

MEAL PLANNING

Educators can help people make vegetarian choices while sticking to a budget and planning meatless meals that make the most of their resources. Using the Food Guide Pyramid, educators can point out vegetarian choices in each food group to help people meet the recommendations of the Dietary Guidelines for Americans.

The position statement points out that a variety of menu planning approaches can provide adequate nutrition for vegetarians, and recommends the following:

- Choose a variety of foods including whole grains, vegetables, fruits, legumes, nuts, seeds, and if desired, dairy products, and eggs.
- Choose whole, unrefined foods often and minimize the intake of highly sweetened, fatty and heavily refined foods.
- Choose a variety of fruits and vegetables.
- If animal foods such as dairy products and eggs are used, choose lower-fat dairy products and use both eggs and dairy products in moderation.
- Use a regular source of vitamin B-12 and, if sunlight exposure is limited, of vitamin D.

A Food Guide for North American Vegetarians is introduced in an article that accompanies this position statement. For most Extension education, however, the USDA Food Guide Pyramid and Dietary Guidelines will be appropriate. The Dietary Guidelines recommend:

“If you usually avoid all foods from one or two of the food groups, be sure to get enough nutrients from other food groups. For example, if you choose not to eat milk products because of intolerance to lactose or for other reasons, choose other foods that are good sources of calcium, and be sure to get enough vitamin D. Meat, fish, and poultry are major contributors of iron, zinc and B vitamins in most American diets. If you choose to avoid all or most animal products, be sure to get enough iron, vitamin B12, calcium, and zinc from other sources. Vegetarian diets can be consistent with the Dietary Guidelines for Americans, and meet Recommended Dietary Allowances for nutrients.”

Position of the American Dietetic Association and Dietitians of Canada: Vegetarian diets. *J Am Diet Assoc.* 2003;103:748-765. <http://www.eatright.org/Public/Files/veg.pdf>



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Resource: “Mealtime Memo” newsletters for child care providers

The National Food Service Management Institute of the University of Mississippi produces a newsletter for childcare providers. Available as pdf’s, each 2-sided handout is centered around a single topic such as snacks, family style meals, or chatting with children at mealtime. The NFSMI website features an archive of newsletters from 2000 to the present, with some issues available in Spanish. While the newsletters are intended for childcare providers, the information is useful for anyone working with preschoolers and is easily adapted for parents.

They can be downloaded from <http://www.nfsmi.org/Information/>

For Your Use: Mealtime with Toddlers

(adapted from Feeding Toddlers Can Be A Challenge. Mealtime Memo for Child Care, No. 5, 2002.)

Parents and child care providers find it’s a challenge to make mealtime as pleasant as possible for everyone while supervising and encouraging a toddler.

During the toddler stage children are learning many important things, such as walking, talking, problem solving, and relating to others. Toddlers are learning to be independent and want to do things for themselves. Parents and child care providers will hear the word “no” many times during this stage! In asserting their independence, toddlers may decide what foods they “will” and “will not” eat. These food likes and dislikes may change daily or weekly.

Parents and child care providers can help children form sound eating habits by offering nutritious food choices and modeling good eating habits.

When planning meals, consider that young children often dislike strong flavors. Toddlers don’t like their foods to be too hot or too cold. Introduce a new food along with an old favorite – try a new vegetable along with a favorite main dish. Give the child some control by offering choices. For example, ask which vegetable they would like for dinner — either the carrots or the green peas. Don’t give up if a new food isn’t a hit right away. Children may need several exposures to a new food before they are willing to try it, and several tries before they decide they like it.

During mealtime, sit with the toddler and eat the same meal. Have a positive attitude toward foods. Discuss what the foods are, where they come from, colors, textures, tastes, and the differences and similarities of foods you are eating.

Choking is an important concern with toddlers. Children should sit in a high chair or at the table for all meals, and parents or providers should stay with children while they are eating. Encourage children to take small bites and praise them when they chew thoroughly. To reduce the risk of choking, cut hot dogs lengthwise into thin strips, and cook carrots and celery until slightly soft, then cut into sticks. Grapes, cherries, and similar round foods should be cut into small pieces. Spread peanut butter thinly.



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Study shows EFNEP helps people improve dietary habits

EFNEP participants in South Carolina improved their dietary habits after receiving EFNEP nutrition education. Researchers collected data from 1141 EFNEP participants who had completed at least 12 sessions of group or individual instruction. Three 24-hour recalls were used to determine whether participants were consuming the recommended number of servings from each Food Guide Pyramid group before, during and after the EFNEP program.

Prior to graduating from the program (completing 12 or more sessions) participants were not consuming the recommended number of servings from the grain, fruit, vegetable, and milk groups. After the program, graduates met recommendations for the vegetable group. They also improved their intakes from the grains and dairy groups, though not to recommended amounts. Before and after the program, participants met recommendations for the meat group. Fiber and selected vitamin and mineral intakes also improved. There was not a significant improvement in the number of servings of fruit. There were no significant differences in changes between those who received education in a group setting and those who received it individually.

This study showed that EFNEP nutrition education, whether in group or individual sessions, was effective in helping low-income individuals improve their diets.

Luccia BHD, Kunkel ME, Cason KL. Dietary changes by Expanded Food and Nutrition Education Program (EFNEP) graduates are independent of program delivery method. *Journal of Extension*. 2003:41(3). <http://www.joe.org/joe/2003june/rb5.shtml>



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News Briefs

FTC and FDA take action against coral calcium marketers

The Federal Trade Commission has charged the marketers of Coral Calcium Supreme with making false and unsubstantiated claims about the product's health benefits. The FTC alleges that Dr Robert Barefoot and others have violated FTC regulations by claiming that Coral Calcium Supreme can treat or cure cancer and other diseases, such as multiple sclerosis and heart disease. They have asked the court for a temporary restraining order that would prohibit the defendants from making the challenged claims and would freeze their assets. In related action, the FTC and the FDA are sending strong warning letters to Web site operators who are marketing coral calcium products claiming that coral calcium is an effective treatment for cancer or other diseases.

Trans fat information

Concerns about the health effects of trans fat (more specifically, certain trans fatty acids) have gotten more public attention since the Office of Management and Budget (OMB) called for information about trans fats to be included in the 2005 edition of the Dietary Guidelines for Americans. If you are looking for background information about trans fats, FDA has an informative fact sheet on their website: <http://www.cfsan.fda.gov/~dms/qatrans.html>

Nutrition for Family Living Index now online!

How many times have you wished you could put your finger on that article from last spring that had something to do with diabetes? Now it will be much easier, with the online index.

Check it out at:

<http://www.uwex.edu/ces/wnep/p3/NFLindex.html> The link is toward the bottom of the main NFL page. The index will be revised in the next year as part of the overall revision of WNEP webpages, so we welcome your feedback. If you have any suggestions, send them to Betsy Kelley or Ellen Henert.



For the record: Atkins and related diet issues

Often a specialist will answer a question or comment on a story in the news by posting to one of the listservs rather than waiting for the next issue of Nutrition for Family Living. In an effort to make those answers available to all NFL readers, and make them easy to retrieve, we will be "re-running" them as part of the next NFL and adding them to the index.

Below are Susan Nitzke's comments as sent to flp-all on June 6, 2003.

Many of you have seen reports on TV and in newspapers that the Atkins Diet has now been proven to be the best way to lose weight. There are also many people that think the U.S. Food Guide Pyramid has already been drastically revised. I want to caution you that such conclusions are way out of line. We still don't have any long-term data to support the effectiveness of very low-carbohydrate eating patterns such as the those recommended by the late Dr. Atkins and other popular authors whose diet books have appeared on bookshelves since the 1950s. Revisions to the pyramid are being considered at USDA, but aren't expected until the next Dietary Guidelines edition comes out in 2005.

Please be aware that the weight-loss difference between the low-carb and the low-fat groups in one of the latest diet comparison studies was not significant after one year. Dropout rates were very high (around 40%), reminding us that diets are difficult to follow in the long run. According to Allan Brett, MD, "We still don't know whether the long-term metabolic effects of low-carbohydrate diets increase or decrease cardiovascular risk. And we might never know, since it is difficult to study these diets long enough to see changes in clinical endpoints" (Journal Watch, June 3, 2003).

An excellent commentary summing up the Atkins diet issues is available at the following website:

<http://www.nationalreview.com/comment/comment-fumento060603.asp>

Gail Frank, PhD, RD (the visiting professor who will do district inservice sessions on working with the media this October and November) is quoted in a similar article, saying: "It's possible that it's calorie restriction, not the amount of protein and carbs, that results in weight loss... Yes, you will lose weight, but whether you'll be able to keep it off for years remains to be seen."

Dr. Frank also said that it may be better to focus on the quality of the foods and to encourage eating more vegetables and fruits, rather than to emphasize proportions of carbs, protein and fat or eliminate fats or carbs from one's meals. Choosing better quality means getting one's carbohydrates from high-fiber unsweetened grains and veggies rather than from low-fat cookies, or cooking with a small amount of olive oil rather than (large amounts of) lard or butter.

Finally, keep in mind that long-term studies are still in progress. The Atkins diet and others like it may work well in promoting quick weight loss, at least for some people, but such an eating pattern is unlikely to be widely endorsed as a healthful long-term way of eating, especially when you consider previous studies such as one by Eileen Kennedy and others in "Popular diets: correlation to health, nutrition and obesity" J Am Diet Assoc 2001;101:411-420. They examined the association between certain health/nutrition indicators and popular diets using data for over 10,000 people from the US Continuing Survey of Food Intakes from 1994-96 and drew the following conclusions:



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"Diets that are high in carbohydrate and low to moderate in fat tend to be lower in energy (calories). The lowest energy intakes were observed for those on a vegetarian diet. The diet quality as measured by HEI (USDA's Healthy Eating Index) was highest for the high carbohydrate groups and lowest for the low carbohydrate groups. The BMIs were significantly lower for men and women on the high carbohydrate diet; the highest BMIs were noted for those on a low carbohydrate diet."