



UNIVERSITY OF
FLORIDA

EXTENSION

Institute of Food and Agricultural Sciences

Paraprofessional Update: Vegetarianism¹

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Learning Objectives:

The paraprofessional will:

- Describe the basic differences between the categories of vegetarian diets.
- List the nutrients that could be of concern for people following a vegetarian diet.
- Identify good sources of those nutrients that could be of concern to vegetarians.
- Discuss at least two recommendations for parents/caregivers of vegetarian children.

Introduction

Although **vegetarianism** of different sorts has been observed in many cultures over thousands of years, recently the number of people that identify themselves as being vegetarian has increased greatly. Due in part to the recent increase in health-consciousness, many people are changing their views on what healthy eating is. Polenta and curry dishes, veggie burgers and Portobello mushroom sandwiches have replaced the tasteless jelly-like tofu of yesterday.

There are many different reason for eating a vegetarian diet, from religion, health, concern for

the animals and the environment, to even cost savings from not eating meat. To some, being a vegetarian is a lifestyle, for others it is a way of eating, and for some it just occasionally provides a healthy alternative meal to the usual diet.

What it means to be vegetarian?

To varying degrees, vegetarians exclude meat, poultry, fish and animal products such as dairy foods and eggs from their diets. Plant sources—grains, legumes, nuts, and vegetables—provide most of the protein for a vegetarian. Some vegetarians avoid meat, but eat dairy products and eggs. Some exclude only red meat but eat fish and poultry. Most vegetarians fit into one of these few general categories:

- **Semi-vegetarian:** Person who usually follows a vegetarian diet, but occasionally eats beef, pork, poultry, or fish.
- **Lacto-ovo-vegetarian:** Person who does not consume any beef, pork, poultry, or fish but will eat eggs and dairy products (most American vegetarians fit into this category).
- **Lacto-vegetarian:** Person who does not consume any beef, pork, poultry, fish or eggs, but will eat dairy products.

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- **Vegan:** Person who follows a diet with no beef, pork, poultry, fish, eggs, or dairy products, eating only plant foods. There is diversity within vegans, with many not eating gelatin (from swine hooves), most bread (contains whey protein from cows), and honey (made by bees).

Does a vegetarian diet provide adequate nutrition?

As with many other diet restrictions, being a vegetarian can be healthful or detrimental- it all depends on the individual's food choices. Many people argue that vegetarian diet focused on whole grains, fruits, vegetables and legumes is much healthier than the traditional 'meat and milk' eating style.

Protein

The first question people will ask is how does a vegetarian diet supply enough protein. In America, getting adequate protein from the diet isn't usually an issue. Non-vegetarians often consume far more than the RDA for protein on a regular basis, because animal foods are concentrated sources. For vegetarians, cereals, grains, legumes, and nuts are considered excellent sources of protein, and for those who eat dairy products, milk, yogurt and cottage cheese are good choices.

As with healthy eating in general, the important thing is to make sure to eat a **variety** of foods throughout the day, not to focus on food combinations in one meal. Good protein sources throughout the day will provide the good quality protein the body needs.

Iron

Americans who eat a meat-centered diet get most of their iron from meat. Good plant sources of iron include dried beans, tofu, whole grains, dark green vegetables such as spinach and other greens, dried fruits, prune juice, blackstrap molasses and fortified breads and cereals. It is important to replace iron-rich animal foods with

iron-rich plant foods to reduce risk of iron deficiency. The absorption of iron is greatly increased by ascorbic acid (vitamin C), which is found in many fruits and vegetables. Foods that are high in vitamin C include citrus fruits or juices, strawberries, kiwi, broccoli, tomatoes, and green or red peppers. Dairy foods, consumed by some vegetarians, are low in iron.

Calcium

We know how important calcium is for building strong bones and healthy teeth. Vegetarians who consume dairy products have excellent sources of calcium built into their diet already, but what about those who don't? Many plant foods offer abundant, available calcium, and now many non-dairy beverages, such as orange juice and soy milk are fortified with calcium to the same level as cow's milk. Good non-dairy calcium sources include dark green leafy vegetables such as kale, mustard greens, bok choy, and broccoli. (Note that not all dark green vegetables—especially spinach and collard greens—are good sources of calcium because its availability for absorption is poor.) Tofu prepared with calcium, some beans, (such as navy, great northern, and pinto) and some nuts (such as almonds) and seeds (such as sesame seeds) are also good sources.

Vitamin B₁₂

With a few exceptions, vitamin B₁₂ is not a real concern for those who include some meat or dairy products. B₁₂ may not get the publicity that many other nutrients receive, but over time, a deficiency can cause anemia and severe, irreversible nerve damage. This is a nutritional issue for vegans, who need to get B₁₂ from fortified foods such as breakfast cereals, soy milk, or veggie patties. It is also available in supplement form, either by itself or in a multi-vitamin. Be aware when reading labels that cobalamin is the form of B₁₂ that is most easily absorbed by the body.

Zinc

Meeting recommended intakes of zinc appears to be a challenge for vegetarians and non-vegetarians alike. Whole grains, wheat germ,

nuts, dried beans and tofu are good plant-based sources of zinc. Although these same foods contain phytates that may reduce availability of zinc, the zinc and trace mineral status of most adult vegetarians appears to be adequate.

Do vegetarian children have special nutritional needs?

Parents and caregivers can meet the needs of growing children following a vegetarian diet. Planning and variety are the keys to doing this. The American Dietetic Association's vegetarian nutrition practice group offers the following practical advice for helping vegetarian children meet their nutritional needs:

- **Calories and fat:** Children have high energy needs, but vegetarian diets are high in fiber that fills kids' stomachs before they are able to consume the levels of calories needed. Offer concentrated sources of calories such as avocados, nuts, seeds, dried fruits, and soy products.
- **Protein:** Protein needs can be met by eating a variety of plant foods and having enough calories. Encourage legumes, grains, soy products, nuts, dairy products, and eggs.
- **Calcium:** Good sources of calcium include both dairy and non-dairy sources. Vegetarians can get the calcium needed from fortified soy and rice milk, fortified orange juice, tofu, and dark green leafy vegetables.
- **Vitamin D:** Exposure to sunlight and dietary sources of vitamin D are needed for the body to absorb calcium. Hands and face need to be exposed to the sun for 20-30 minutes, two to three times a week for the production of vitamin D in the body. Children that are regularly exposed to sunlight should have adequate vitamin D status. Foods that provide vitamin D include fortified cow's milk, some brands of soy milk and most dry cereals.

- **Iron:** Iron-deficiency anemia is a common problem for non-vegetarian and vegetarian children alike. Whole and enriched grains, iron-fortified cereals, legumes, dark green leafy vegetables, and dried fruits are excellent sources of iron, especially for vegetarian children.
- **Vitamin B₁₂:** Vegetarian children should eat foods fortified with vitamin B₁₂, including fortified soy milk, fortified nutritional yeast, and some breakfast cereals.

The Bottom Line

As with any diet, a vegetarian or near-vegetarian diet should be well planned and balanced. Here are the key points about vegetarian diets:

- Keep the intake of low-nutrient-dense foods, such as sweets, fried foods and highly processed foods, to a minimum.
- Choose whole or unrefined grains instead of refined products whenever possible to meet energy needs.
- Eat a variety of fruits and vegetables—at least 5-10 servings per day—including a good food source of vitamin C to enhance iron absorption.
- Meet your protein needs by eating a variety of legumes, nuts and seeds, tofu, meat substitutes and whole grains.
- If you choose a vegetarian diet, use a properly fortified food source of vitamin B₁₂, or take a supplement.

Vegetarian Nutrition Resource List for Consumers

Source: USDA Food and Nutrition Information Center (FNIC), National Agricultural Library http://www.nal.usda.gov/fnic/pubs_and_db.html

Cookbooks

Cooking Vegetarian: Healthy, Delicious and Easy Vegetarian Cuisine Vesanto Melina and Joseph Forest. New York, NY: John Wiley & Sons, 1998. 239 pp.

Meatless Meals for Working People: Quick and Easy Vegetarian Recipes, 2nd ed.

Charles Stahler and Debra Wasserman. Baltimore, MD: The Vegetarian Resource Group, 1998. 192 pp.

Vegetarian Cooking for Everyone

Deborah Madison. New York, NY: Broadway Books, 1997. 742 pp.

20 Minutes to Dinner: Quick, Low-Fat, Low-Calorie Vegetarian Meals

Bryanna Clark Grogan. Summertown, TN: Book Publishing Company, 1997. 192 pp.

Pamphlets

"Eating Well --The Vegetarian Way "(1998)
Available from the American Dietetic Association, 216 West Jackson Blvd., Suite 800, Chicago, IL 60606-6995.
(800) 877-1600, ext. 5000

Web Sites on the Internet

The American Dietetic Association (ADA)
216 West Jackson Blvd., Suite 800, Chicago, IL 60606-6995. (800) 877-1600.

Web site: <http://www.eatright.org/nfs/>
Contents: Fact sheet --Feeding Your Baby the Vegetarian Way

Web site: <http://www.eatright.org/adap1197.html>
Contents: The American Dietetic Association's position paper on vegetarian nutrition. This technical paper includes a food guide pyramid for vegetarian meal planning and a table of food sources of key nutrients.

The American Dietetic Association Vegetarian Nutrition Dietetic Practice Group (VN DPG)

Web site: <http://www.eatright.org/dpg/dpg14.html>

Contents: Provides information about this group's activities and provides a list of fact sheets on vegetarianism which can be ordered from VN DPG.

Mayo Clinic Health Oasis

Web site: <http://www.mayohealth.com>

Contents: Going Vegetarian the Healthy Way; Vegetarian Food Guide; Vegetarian Cookbook Reviews.

Vegetarian Resource Group

P.O. Box 1463, Baltimore, MD 21203. Phone: (410) 366-8343. Web site: <http://www.vrg.org>

Contents: Extensive vegetarian and vegan nutrition information; vegetarian and vegan recipes; excerpts from Vegetarian Journal.

The American Dietetic Association's complete Food and Nutrition Guide, 1996.

ADA position paper of vegetarianism, 1997.
<http://www.vrg.org/>
<http://www.vegsource.com/>

Food Guide Pyramid for Vegetarians

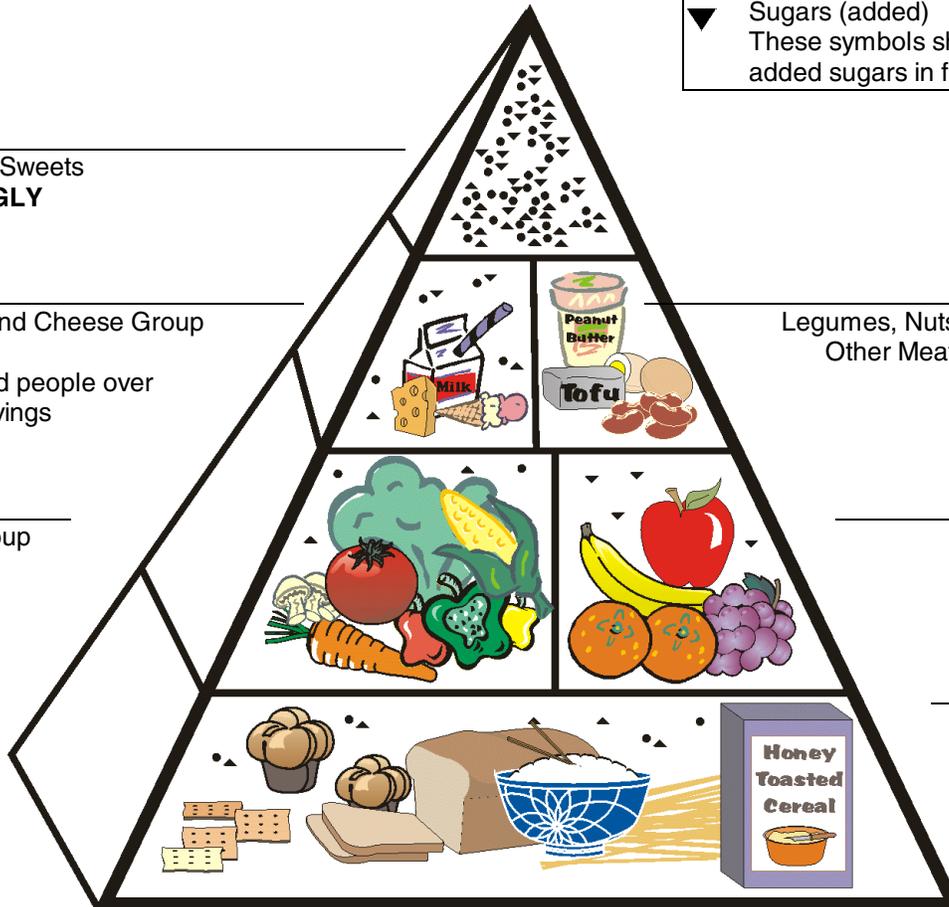
Meal Planning

KEY	
●	Fat (naturally occurring and added)
▼	Sugars (added)
These symbols show fat and added sugars in food	

Fats, Oils and Sweets
USE SPARINGLY

Milk, Yogurt, and Cheese Group
2-3 Servings
Teenagers and people over 51 need 4 servings

Vegetable Group
3-5 Servings



Legumes, Nuts, Seeds, Eggs and Other Meat Substitutes Group
2 - 3 Servings

Fruits Group
2 -4 Servings

Breads, Cereals, Rice, and Pasta Group
6-11 Servings
Half from whole grains

Food Group Serving Sizes

Bread, Cereals, Rice and Pasta Group

- 1 slice bread
- 1 medium tortilla
- 1 small roll or muffins
- 1 oz. ready-to-eat cereal
- 1/2 cup cooked cereal, rice, or pasta

Vegetables

- 1/2 cup cooked vegetables
- 1/2 cup chopped raw vegetables
- 1 cup raw, leafy vegetables
- 3/4 cup vegetable juice

Fruits

- 1 medium apple, banana, or orange
- 1/2 cup chopped or canned fruit
- 1/4 cup dried fruit
- 3/4 cup 100% fruit juice

Milk, Yogurt and Cheese

- 1 cup low-fat or fat-free milk
- 1 cup low-fat or fat-free yogurt
- 1-1/2 ounce natural cheese

Other calcium sources

- 1/2 cup tofu
- 1 cup fortified soy milk
- 1 cup calcium-fortified orange juice

Legumes, Nuts, Seeds, Eggs & Other Meat Substitutes

- 1/2 cup cooked dry beans, lentils, peas
- 1/4 cup tofu
- 1 cup soy milk or tempeh
- 2 Tablespoons nuts or seeds
- 2 Tablespoons peanut butter
- 1 egg or 2 egg whites

Fats, Oils and Sweets

- 1 teaspoon oil, margarine, or mayonnaise
- 2 teaspoons salad dressing
- 1 teaspoon sugar, jam, jelly, honey, syrup

Adapted with permission from the Food Guide Pyramid for Vegetarians Meal Planning. American Dietetic Association Position "Vegetarian Diets", November 1997, Volume 97, No. 11, Pages 1317-1321.