



Women's Health & Reproductive Nutrition Report

A quarterly publication of the Women's Health and Reproductive Nutrition Dietetic Practice Group

Vegetarian Nutrition During Pregnancy

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Summer 2006

Women who are vegetarian seek nutrition counseling during pregnancy for a variety of reasons. They may be new to vegetarianism and want to be sure they're eating properly. Experienced vegetarians may want advice on dietary changes necessary to accommodate their nutritional needs during pregnancy. They may have been referred by their health care provider because of concerns about the adequacy of their food choices. In any case, dietetics professionals need to be able to provide information about food sources of key nutrients, to support all clients who choose to follow a vegetarian diet, and to give current information about vegetarian nutrition in pregnancy (1). The purpose of this article is to provide dietetics professionals with the necessary tools for effectively assessing and counseling pregnant vegetarians.

A vegetarian is a person who does not eat meat, fish, or poultry (1). Lacto-ovo vegetarians include dairy products and eggs in their diets; vegans avoid eating any animal products. In addition, many people who do not strictly avoid meat, fish, or poultry, describe themselves as "vegetarian" so individual assessment of food choices is needed in order to most effectively assess and counsel vegetarian clients.

Studies of vegetarian pregnancy are very limited. Most research is quite old and typically includes only small numbers of subjects. As the number of vegetarians increases (1), additional research in this area will provide a welcome addition to the professional literature.

Keys to working with vegetarian clients or those who are interested in vegetarian diets are knowledge of vegetarian nutrition and foods, flexibility, sensitivity to food preferences, and diplomacy. For most nutrients, other than iron and possibly zinc, recommended intake levels do not differ between vegetarians and non-vegetarians, although major food sources may vary. Key nutrients for vegetarian pregnancy include protein, iron, zinc, calcium, vitamin D, vitamin B₁₂, n-3 fatty acids, and iodine. Adequate energy intake is also important.

Protein

The recommended dietary allowance (RDA) for protein during pregnancy is 1.1 g/kg/d or 25 grams/day higher than the protein RDA for the non-pregnant woman (2). The estimated energy requirement (EER) increases by 340 calories in the second trimester and by 452 calories in the third trimester (2). Using a pre-pregnancy EER of 2016 calories/day (based on a 1.65 m, 18.5 kg/m² low active 30 y F (2), in the first trimester, approximately 14% of calories should come from protein with 12% and 11.5% of calories from protein in the second and third trimesters, respectively. The typical protein intake of lacto-ovo vegetarian women is 12-14% of energy while vegan women average between 10 and 12% (3). Thus, with some attention to good protein sources such as soy products, dried beans, whole grains, nuts, and nut butters, it is entirely possible for the higher protein needs of pregnancy to be met on a vegetarian diet.

Iron

Iron-deficiency anemia is no more common in vegetarian women in Western countries than in non-vegetarian women.

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Vegetarians, however, are more likely to have lower iron stores, as indicated by serum ferritin (4). Thus, in pregnancy, individual assessment of iron status and of dietary iron intake is necessary to determine whether or not iron supplements are indicated.

Iron is unique among nutrients, in that iron has a separate DRI for vegetarians. This higher recommendation is based on the lower bioavailability of non-heme iron, the sole form of iron in a vegetarian diet. Iron bioavailability in a vegetarian diet is estimated to be 10 percent, compared to 18 percent for a typical non-vegetarian diet (5). This results in an iron RDA for pregnant vegetarians of 49 mg/d. This level of intake is almost impossible to achieve without using fortified foods and/or iron supplements. Table 1 shows a sample menu including fortified foods which meets the iron RDA for pregnancy for vegetarians. Including a source of vitamin C with each meal enhances iron absorption.

Zinc

Zinc intakes during pregnancy, by both vegetarians and non-vegetarians, are frequently lower than recommendations (3). Phytate, fiber, and other factors in vegetarian diets can interfere with zinc absorption although some techniques such as leavening bread and soaking and sprouting beans can increase zinc bioavailability (6). Those vegetarians whose diet centers on high-phytate grains and legumes may need as much as 50 percent more zinc than the RDA (5) for a total of 16.5 mg. Zinc supplements (or a prenatal supplement containing zinc) should be recommended if dietary assessment suggests an inadequate zinc intake (7).

Calcium and Vitamin D

Women following lacto-ovo vegetarian diets typically have calcium intakes that meet recommendations (3). Calcium intakes of vegan women have been reported to be low (3) although much of the research is from a time when calcium-fortified foods were not as prevalent as they are today. Many meal plans call for calcium-fortified soymilk as a convenient way for pregnant vegans to meet calcium needs. Other calcium-rich non-dairy foods include low-oxalate green vegetables (bok choy, collards, Chinese cabbage, kale, broccoli, turnip greens, and okra), almonds, figs, soybeans, calcium-set tofu, calcium-fortified fruit juices, and calcium-fortified breakfast cereals.

Fortified foods including soymilk, rice milk, fruit juice, and breakfast cereals are the main dietary sources of vitamin D for vegetarians. Sunlight exposure and prenatal supplements can also be used to meet vitamin D needs. Cutaneous synthesis of vitamin D is affected by numerous factors including season, location, skin pigmentation, and sunscreen use (8).

Table 1: Sample menu supplying >49 mg of iron and including enhancers of iron absorption

	Iron (mg)
Breakfast	
1 packet instant oatmeal	4.0
1 cup fortified soymilk	1.4
½ cup orange juice	0.1
Snack	
Bagel with fruit spread	5.2
Lunch	
1 cup lentil chili served over baked potato	6.5
1 cup fortified soymilk	1.4
1/8 medium watermelon	1.4
Snack	
15 dried apricot halves	2.1
¼ cup cashews	1.4
Dinner	
Tofu and spinach stir-fry (4 oz tofu, 1 cup spinach)	12.4
½ cup millet	1.8
½ cup sliced strawberries	0.3
Snack	
1 cup iron-fortified ready-to-eat cereal	18
1 cup fortified soymilk	1.4
Total	57.4

Source: USDA Nutrient Database for Standard Reference, Release 18, 2005 and manufacturer's information

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These factors should be taken into consideration when assessing vitamin D needs.

Vitamin B₁₂

A regular source of vitamin B₁₂ is essential in pregnancy to insure adequate vitamin B₁₂ stores in the infant (9). Vitamin B₁₂ sources include dairy products, eggs, and fortified foods. Table 2 provides more information about levels of vitamin B₁₂ in foods. Sea vegetables, tempeh, and miso are not reliable sources of vitamin B₁₂ (1).

n-3 Fatty Acids

Unsupplemented vegetarian diets contain only small amounts of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) while

vegetarian diets contain virtually none of these n-3 fatty acids. As would be expected, lacto-ovo vegetarians and vegans, including pregnant women (10) have lower blood concentrations of EPA and DHA than non-vegetarians.

Table 2. Vitamin B ₁₂ sources for vegetarians	
Food	Vitamin B ₁₂ (mcg)
Fortified cereals, 1 oz	0.6-6
Fortified soymilk, 8 oz	0.8-3.2
Vegetarian Support Formula Nutritional Yeast, miniflakes, 1 T	1.5
Fortified meat analogs (burgers, lunch "meat"), 1 oz	0.5-1.2
Cow's milk, 8 oz	1
Egg, 1 large	0.5
Source: USDA Nutrient Database for Standard Reference, Release 18, 2005 and manufacturer's information	
Note: Vitamin B ₁₂ RDA for pregnancy is 2.6 µg/d.	

Higher intakes of DHA and EPA may have beneficial effects on birth weights and gestational length (11). DHA also appears to play a role in an infant's visual acuity and possibly in cognitive performance (12) although this is controversial (13).

Some EPA can be synthesized from another n-3 fatty acid, alpha-linolenic acid (ALA). EPA can then be converted to DHA. Synthesis and conversion rates are very limited, although they may be increased in pregnancy (11). Vegetarians should include good sources of ALA in their diet to promote EPA and DHA synthesis. ALA sources include ground flaxseed, flaxseed oil, canola oil, soybean oil, soy products, and walnuts. Linoleic acid and trans-fats can inhibit EPA production so these foods should be limited (1). Vegetarian DHA supplements derived from microalgae are available (14).

Iodine

Many foods commonly eaten by vegetarians, such as fruits, nuts, and vegetables, are low in iodine. Vegetarians who do not use iodized salt or sea vegetables are at increased risk of developing iodine deficiency. Because of the effect of iodine deficiency on fetal development, this is of special concern in preg-

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From the Editor:

Krista Neal, MS, RD, LD

Happy summer! It's my favorite time of year. Summer means it's time for a change in WHRN leadership. I'd like to thank Megan Wolf, Miri Rotkovitz-Wagner, Ginger Carney, Ursula Harry, and Maria Duarte for their contribution to the group. Please welcome Egondu Onuoha, Judith Brown, and Dee Sandquist to new leadership positions!

Our authors this month are Reed Mangels and Debbie Lucus. Reed is the author or editor of multiple books and reports on vegetarian and vegan diets. In addition to her professional expertise, Reed is the mother of two children who are vegan. Debbie is with the University of California, Davis, Medical Center Heart Disease Reversal Program in Sacramento. She has excellent suggestions for encouraging clients to move toward a vegetarian diet.

Have you joined our list serve yet? It is a fantastic resource. Everyday I learn something new from a message someone has posted. The average number of daily posts is between two and three, enough to be helpful, not so many as to be overwhelming. Join us by sending a message to WHRN_list_subscribe@yahoo.com.

CHOOSE TO MOVE

Choose to Move provides participants with an easy-to-follow plan, a helpful handbook, monthly e-mails with suggestions for physical activity, tips on how to stay motivated and recipes with nutrition information. **Choose to Move** is part of the American Heart Association's **Go Red For Women** national movement to raise awareness of cardiovascular disease as the number one killer of women and how to reduce the risk. Women can register for the program by visiting www.americanheart.org/choosetomove or calling 1-888-MY-HEART (1-888-694-3278). The Almond Board of California and the Mrs. Dash brand sponsor **Choose To Move**.



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nancy. The iodine RDA for pregnancy is 220 µg/d. This can be provided by ¾ teaspoon of iodized salt or by iodine supplements. Some, but not all, prenatal supplements contain iodine. Sea vegetables like nori and hiziki can provide iodine but their iodine content is quite variable. Maternal iodine intakes above 1100 µg/d should be avoided (5).

Weight and Weight Gain

Vegetarians as a group tend to be leaner than non-vegetarians with vegans tending to have a lower body mass index (BMI) than other vegetarians. This suggests that vegetarian women are more likely to begin pregnancy with a lower BMI than non-vegetarians. Standard weight gain recommendations for pregnancy should be used for vegetarians. Weight gain of pregnant lacto-ovo vegetarians and vegans is generally adequate (1). Women who have difficulty meeting energy needs and gaining weight may benefit from the following suggestions:

- Use small, frequent meals and snacks.
- Emphasize concentrated sources of energy and nutrients such as nuts and nut butters, tofu and other full-fat soy products, dried fruits, and bean spreads.
- Replace some high-fiber foods with refined foods (i.e. enriched grains, fruit juices) if high dietary fiber intake is preventing intake of more calories or absorption of nutrients.
- Use more oils in cooking.
- Try nutritious higher-calorie beverages like smoothies or milkshakes in place of tea, coffee, seltzer, or diet drinks.

Meal Planning Guides

Meal planning guidelines for vegetarian clients should achieve the following goals (15):

- Accommodate different types of vegetarian diets
- Help vegetarians meet the most recent nutritional recommendations (DRIs and Dietary Guidelines) including those for pregnancy
- Focus on specific nutrients identified as being of particular interest in vegetarian diets
- Include a wide variety of foods
- A vegetarian food guide has been developed (food guide paper) meeting these goals and that can be modified for pregnancy. See http://www.eatright.org/cps/rde/xchg/ada/h.s.x.s.l/governance_5105_ENU_HTML.htm for more information.

Supplements

Prenatal supplements containing ingredients acceptable to vegetarians or vegans are available. These can be recommended for women who are unable to meet nutrient needs solely from diet. Supplements of individual nutrients such as iron or vitamin B₁₂ are an alternative. Some vegetarian prenatal supplements contain no iodine or are low in calcium. Some provide vitamins, especially thiamin, riboflavin, niacin, vitamin B₆, and vitamin B₁₂ at levels much higher than the DRIs. Since supplement content and availability may vary, clients should be encouraged to bring in their supplement label and practitioners should be aware of commonly used products.

Conclusion

Vegetarian diets can be healthful and nutritionally adequate for pregnant women. Key nutrients for pregnant vegetarians include protein, iron, zinc, vitamin B₁₂, n-3 fatty acids,

iodine, and calcium and vitamin D (for vegans). Dietetics professionals should be aware of good sources of these nutrients and be able to assess the need for supplements.

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From the Chair

Jeanne Blankenship, MS RD

If you are new to WHRN, welcome! If you are a returning member, welcome back! The summer months are busy for DPG's as leaders transition into new roles and priorities are set for the year. No matter where you are in your career, our DPG has something to offer. Some of you are old enough to remember "Ask not what your country can do for you, but what you can do for your country." These words of wisdom from JFK can be ubiquitously applied to our DPG as well. Many are here for the newsletter, a good read to say the least. Others are here to make new connections or learn about a new area of nutrition. I am personally here to make a difference in how other dietitians perceive the importance of women's health issues, and knowing that makes it easy for me to volunteer. I hope each of you will consider why you have joined or re-joined and make that a reason to get more involved. Make it your "mantra."

We need your help to bring women's health issues to the forefront of ADA's strategic platform. If you are looking for something a bit less ambitious, consider offering your advice or expertise to our newer members by answering questions posted to the listserv or authoring an article for our newsletter.

For those of you who are new to the group, the water is warm, jump in! This issue focuses on vegetarianism and plant-based diets because it was requested by many of you. That's how it works -- you speak and our DPG responds. We are conducting a membership survey in the next few months which will allow us to better meet your needs. Let your voice be heard and just maybe, it will change the way business gets done.

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WHRN Volunteer Opportunities:

If you are a WHRN practice group member and would like to nominate yourself or someone else you think would do a great job, or to find out more information about roles and responsibilities of the positions (such as full position descriptions), please email Barbara Dubois (rdubios03@snet.net) or Judy Brown (brown_j@epi.umn.edu) before August 1, 2006.

We are looking for nominations for the following elected officer and committee positions:

Chair-elect: This person takes over the Chair position after a one-year term as Chair-elect, and then assumes the role of Past-chair for a year.

Treasurer: 2 year term

Secretary: 2 year term; next election in 2007

Nominating Committee: 2 year term

We also need volunteers for other positions:

Assistant Publications Coordinator-This person takes over the Publications Coordinator position after a one-year term as assistant.

Website Redesign Committee

Breastfeeding Task Force

"I am more confident in my ability to lead, not just in the ADA, but at home and at work."

-Jamillah Hoy-Rosas on the benefits of leadership



DPG ACTIVITIES AT FNCE 2006

—Laura Couillard, RD, FNCE Coordinator 2006

Aloha! Women's Health and Reproductive Nutrition will once again be involved in activities at Hawaii FNCE 2006.

Beginning at 7:00am on Saturday, September 16, 2006 the **Executive Committee** will meet and will be joined in the afternoon by Committees Chairs and Coordinators. Members are encouraged to attend the afternoon portion of the meeting. The meeting will run until 2:30 pm in the afternoon. It's always a pleasure to put a face with a phone voice or an email correspondent.

WHRN will have an educational session with Bruce Hollis, PhD on Sunday, September 17th, entitled "**Rethinking Perinatal Vitamin D Intake: Is the Current Recommendation from the DRI's Enough?**" The objectives for this session are to describe key environmental and metabolic factors that contribute to hypovitaminosis D during pregnancy, lactation and early infancy, to define the level of vitamin D supplementation required to improve biochemical nutrition markers, to describe the physiological role of maternal vitamin D in human milk quality and the significance of hypovitaminosis D on maternal and infant health and to evaluate the research evidence behind current recommendations for supplementation. The session is Continuing Professional Education level 2 and the suggested Learning Needs Codes are 4130, 4150, and 2090.

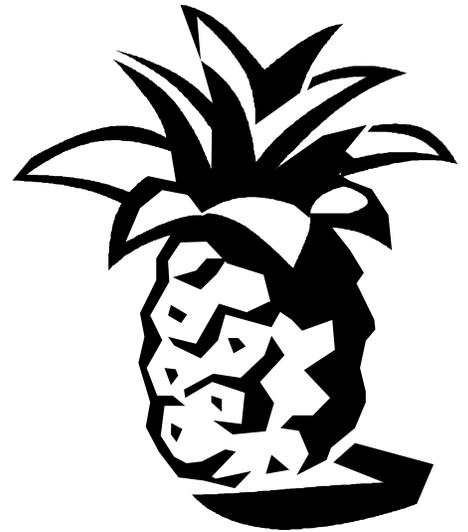
Our highlight is always the **Membership Reception** where you can network with an extraordinary group of people. It will be held on Sunday, September 17, 2006 from 5:30 - 7:30pm. Our reception this year will be sponsored by Martek. During the reception WHRN member Carol J. Lammi-Keefe, Ph.D., R.D. a Professor of Nutrition and a University Research Fellow in the Department of Nutritional Sciences at the University of Connecticut will present an educational presentation on DHA entitled: **Smarter, Better Sleeping Babies—Can What the Mother Consumes During Her Pregnancy Make a Difference?** There is always an incredible wealth of knowledge and enthusiasm circling the room.

In addition to networking we always try to add in some fun and humor. Last year in St Louis our centerpieces were baseball caps and we raffled them off. This year in Hawaii maybe we'll use a pineapple?

The **DPG Showcase** will be held on Monday, September 18, 2006 from 10:30am – 1:00pm. Please come by and say hello.

On Tuesday, September 19, 2006 the **WHRN Breast Feeding Task Force** will be meeting 2:30pm - 4:30pm.

We will be helping to sponsor the **Mother's Room** again this year. Volunteers are needed for the room. If you have used this room in the past or are interested in this area of expertise, it is a great place to socialize while helping out for an hour or two. Please contact Cathy Fagen at 562-595-7930 or cfagen@memorialcare.org or Krista Neal at 512-569-6400 or kristakaye@hotmail.com for information.





Ask The Experts

We posed the following question to WHRN members who counsel breastfeeding women:

A breastfeeding mom is worried that her newborn infant may not be getting everything he needs from her milk. She explains that she is a vegan. What advice do you give her about the quality of her milk?

“I think it is important to note that a vegan mother is more like any new mother than she is different. The only essential nutrient that she cannot get in her diet is B-12, so she must be counseled to take a supplement. As long as a vegan mother is ensuring that she has an adequate source of B12, her breastmilk should be nutritionally adequate.”

-Karen Peters, MBA, RD, IBCLC, LCCE, Executive Director Breastfeeding Task Force of Greater Los Angeles

“We have very few true vegetarians in our clinics. When asked what they eat and don't eat (I use a quick food frequency), many of the people who tell us they are vegetarians are only excluding beef. Of those, many have just started to do so now that they are pregnant because they have heard it's healthier. Given her iron values, stage of pregnancy, and willingness to eat red meats, we discuss her options. I have had people who tell me they are vegetarian who won't eat beef but will eat liver, so I don't assume anything.....”

- Jean Cox, MS, RD, LN, Department of OB/GYN, University of New Mexico

““I think it is important to note that a vegan mother is more like any new mother than she is different.”-Karen Peters

“We assess the diet via a 3-day food recall or food logging to see what nutrients may be missing and counsel accordingly. We recommend all moms consume foods that are fortified with vitamin D and B-12 or that they take supplements for these nutrients. Iron, zinc, B-6, calcium, etc are recommended through fortified foods (or supplements if needed) based on the dietary recall info.”

-Jamie Stang, PhD, MPH, RD, University of Minnesota

“I would tell vegetarian, breastfeeding mothers to become familiar with ways to combine plant foods to provide adequate nutrition for themselves and their babies. For instance combining rice and beans would provide complete proteins. Including eggs, nuts, and meat substitutes is also helpful in providing a balanced diet for the breastfeeding mother and meeting her increased nutrient needs. A multivitamin/mineral supplement may be beneficial to be assured all nutrient requirements are being met. Strict vegans should certainly take a vitamin B-12 supplement, since this nutrient is deficient in a diet without any animal products. Also, consuming enough calories to provide energy should be a concern, especially if only plant products are consumed.”

- Ginger Carney, RD, LDN, IBCLC, Clinical Nutrition Manager./Lactation Consultant, Le Bonheur Children's Medical Center, Memphis, TN

“If a vegetarian avoids fish products and doesn't use iodized salt, iodine intake could be low. Not all prenatal supplements have 220 µg of iodine.”

-Miriam Erick, MS RD CDE LDN, Boston, MA

“First of all, I would not immediately assume anything because she is vegan, either about the quality or her diet or her nutrition food habits. Vegetarians and vegans, like meat eaters, may eat extremely well or follow less than optimal diet. Being vegan should not be a red flag for concern but flag that different types of questions should be asked in the assessment. I usually do a detailed nutrition history of the moms eating habits and also find out more of her vegetarian preferences. Important questions that might help in my assessment are: reason(s) for being vegetarian or vegan, foods avoided and years being vegetarian. Together with the nutrition assessment and the clinical lab work and medical history I would make my nutrition plan just as I would for any client.

Most likely if she is vegan I would focus on whether she was consuming adequate energy as well as foods that are good sources of zinc, iron and calcium. I would also check whether she was consuming foods or a multivitamin containing vitamin B-12 (important if she was truly vegan and not vegetarian). A final point I would consider is whether the mother and child are likely to

be getting adequate exposure to the sun (a very controversial topic right now) or if a vitamin D supplement is needed. According to Hollick, all breast fed infants should be given a vitamin D supplement because human milk is deficient in vitamin D. Also, I would look at whether the mom is consuming vitamin D fortified foods and if so whether she is consuming mostly vegetarian vitamin D (D2). Recent evidence is also suggesting that Vitamin D2 is about 1/3 as effective as vitamin D3 and increasing stores of 25(OH)-vitamin D; How this issue would resolve would depend on the mom's history, skin color and personal preferences.”

-D. Enette Larson-Meyer, PhD, RD, FACSM, Assistant Professor of Human Nutrition, Department of Family & Consumer Sciences, University of Wyoming



Photo by Chris Coxwell



Invited Editorial: Women & CVD – is there a place for plant-based diets? —Debbie Lucas, MS, RD, CDE

Cardiovascular Disease (CVD) is the leading cause of death among women, killing 39% of women in the US. (1) Heart disease kills six times as many women as breast cancer. Yet, breast cancer is the disease at the top of the list of women's concerns. Risk factors for CVD that can be improved through diet include: hypertension, hyperlipidemia, overweight and diabetes. According to the National Cholesterol Education Program Adult Treatment Panel III (NCEP ATP III) guidelines, dietary modification is considered to be the first approach for hyperlipidemia (2), opening the way for dietitians to aid clients in risk reduction by dietary means. Growing scientific evidence suggests vegetarian diets may play a role in reducing CVD risk and reducing plasma lipids (3). When counseling women with heart disease or those attempting to reduce risk, is there a place for plant-based diets?

A Vegetarian? Lacto-ovo Vegetarian? A Pesco-Vegetarian or a Flexitarian?

The term “vegetarian” takes on many forms. The spectrum of vegetarian diets runs from those stating, “Oh, yes, I follow a vegetarian diet—I only eat chicken and fish”, to the vegan who chooses to not eat any foods derived from animal sources. The term ‘flexitarian’ is becoming more widely used and incorporates those who do eat meat and animal products, but try to include more meatless meals. Clients may shy away from becoming vegetarian imagining the stereo-type ‘hippie’ or fear of having to eat nothing but tofu. They may be open to trying more plant-based foods, especially if made aware of health benefits of this eating style. Clients need to have direction to be successful in lifestyle changes, and dietitians are in a prime position to help them. The research continues to link vegetarian diets with reduced rates of heart disease, some cancers, obesity,

hypertension, hyperlipidemia and type 2 diabetes. While the reduction in heart disease risk has not consistently been shown to be as significant in women as men, the health benefits are still considerable. *The Dietitian's Guide to Vegetarian Diets, 2nd Edition*, by Messina, Mangels & Messina is an excellent resource for current literature on vegetarian diets. (3)

For our clients with CVD, what can a vegetarian diet help them to achieve?

According to Messina, lower heart disease risk among vegetarians can be attributed to: lower intake of saturated fat, cholesterol, and heme iron; higher intake of fiber, antioxidants, phytochemicals and folate; lower iron stores, lower body mass index and lower blood pressure. (3) If a client is guided to make diet changes consistent with these factors, it can translate into key motivating factors: less illness and fewer deaths from heart disease, less medication to control risk factors, fewer co-pays for medications and fewer trips to the doctor. A modified plant-based diet may have even better results. Current research by Jenkins, et al, examines the effects of a ‘portfolio’ of cholesterol lowering foods as part of a low saturated fat plant-based diet. This diet incorporates foods with viscous fiber (such as oats, okra, eggplant), soy protein, plant sterols and almonds. The research demonstrated following this diet resulted in lipid-lowering effects near that of a statin drug. (4)

What should our clients be eating?

According to the American Heart Association guidelines, lifestyle interventions for CVD prevention in women include a heart-healthy diet -- defined as a plan utilizing a variety of fruits, vegetables, grains, low or non-fat dairy products, fish, legumes and protein low in saturated fat. Saturated fat should be less than 10% of total calories and cholesterol intake should be less than 300 mg/day. Also, individuals are encouraged to limit trans-fatty acid intake. For high-risk women (including those with current CVD or diabetes), it is suggested that saturated fat be less than 7% of total

calories, and total cholesterol less than 200 mg/day. Supplementation of folic acid may be needed if homocysteine is above normal levels. (5) These goals can easily be met and exceeded with a plant-based diet. Patients need guidance in their choices and help to overcome barriers in reaching their goals. As with any nutrition assessment, it is necessary to take a look at what clients are eating now and where they are in respect to readiness to change. Certain myths need to be dispelled, such as the protein adequacy of a vegetarian diet. Plant sources of nutrients usually obtained from animal sources should be discussed, such as plant sources of calcium for those avoiding dairy products and iron sources and tips to increase iron absorption. There are certain nutrients that are of concern when animal products are completely eliminated from the diet, such as B12 (available by supplement or fortified foods), Vitamin D (available in fortified soy milk, sunshine or supplement), and Omega-3 Fatty Acids (found in flax, walnuts, canola oil). It should be noted that plant sources of omega-3 fatty acids are poorly converted to DHA and there is less evidence supporting a benefit in CVD from these foods. (5) A well-planned diet can easily incorporate these nutrients.

It may be necessary for dietitians to overcome some of their own assumptions about vegetarian diets. Registered dietitians may wrongly assume their clients would never make the change to a vegetarian diet. This may or may not be true, but it is a disservice to our clients if registered dietitians don't communicate the benefits of more plant-based foods and introduce them to some options that may work into their lifestyles. Many patients can become, at the very least, flexitarians, with excellent results. Registered dietitians should become familiar with vegetarian product lines, meat substitutes, plant-based protein foods, and local resources for these foods. Many vegetarian product lines are considered mainstream now and are available at most grocery stores. There is nearly every conceivable meat substitute available made from soy, gluten, beans, grains or mycoprotein. Clients may be

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interested in samples of veggie meats and soy products, and want to learn about them.

Where do you begin when guiding your clients towards plant-based diets?

Based on the patient's readiness to change, acceptance of plant-based foods and health goals, the registered dietitian can guide the client to the changes she is capable of making at this time in her life. Looking at current intake, there may already be meatless meals that she and her family enjoy. Some of her current favorite recipes may easily be modified by leaving out meat or using a protein substitute. She may want to select a certain number of meals or days of the week to be meatless. Many clients find breakfast is an easy meal to make vegetarian. Offer information on plant proteins, such as how to cook beans, soy products and whole grains. Teach recipe modification to lower saturated fat and animal protein. Classes are a great way to help clients make small, healthy steps towards eating less meat and saturated fat and incorporating more plant proteins. Tasting of various vegetarian dishes or products help class attendees expand their knowledge. Occasional potlucks with a vegetarian

theme let clients try dishes they may not have had the nerve to try at home and encourages sharing of ideas among participants. Action plans can be developed at every meeting for small, reachable goals leading to a more plant-based diet. If your client is not ready to do away with meat, encourage more plant foods and/or cholesterol lowering foods. Add soluble fiber, plant stanols/sterols and more fruits and vegetables while decreasing meat portions and incorporating lean meats.

Often there is concern with cost, eating out and family acceptance when moving toward a plant-based diet. Regarding cost, meat substitutes are not inexpensive, but when replacing meat with beans, soy or tofu, the cost is much less than the typical American diet. Purchasing fruits and vegetables in season or at the local Farmers' Market can help to reduce costs. Help clients to overcome barriers to eating out, by making suggestions about vegetarian-friendly restaurants in your area. Unfortunately, many vegetarian options in restaurants are smothered in cheese, oil or cream and may not be as heart-healthy as the vegetarian label suggests. Practicing ordering or having local restaurant menus available can give the opportunity to improve skills in a classroom or one-on-one setting. It is true that family acceptance can be a challenge. Starting slowly and maximizing the meatless dishes the family has already enjoyed (such as bean burritos) can ease the family into the changes. Offering recipes, cookbook suggestions, magazines and websites for family-friendly dishes can help.

Since heart disease is the number one killer of women in our country, and much research suggests a vegetarian diet can help to reduce risk, this is an excellent opportunity for nutritional professionals to guide our clients in a lifestyle change benefiting them and their families. As with any type of eating pattern, a vegetarian or plant-based diet must be planned in order to ensure balance and nutritional adequacy. Since vegetarian eating may be new to many people, guidance is needed to dispel myths and incorporate foods helpful to reducing heart disease risk. When educated about the benefits of plant foods as well as what to do with them, most clients are willing to make diet changes at some level. Once they see the results, they are encouraged to delve even further into the realm of the vegetarian diet! Clearly there is room at the table for women who follow a plant-based diet.

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1. www.Americanheart.org, accessed 6/7/06
2. Third Report of the National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III) final report. *Circ*, 2002;106:3143-421

(Continued on page 11)

Counseling Tips for Vegetarian Clients

- Familiarize yourself with vegetarian eating styles and plant protein sources.
- Become familiar with stores and restaurants in your area offering vegetarian ingredients.
- Assess overall nutritional adequacy of current eating habits.
- Determine client's readiness to change and motivation level to reduce risk.
- Discuss barriers to change and problem-solving techniques.
- Dispel myths about nutrient inadequacy of vegetarian diets.
- Give vegetarian sources of key nutrients: protein, B12, calcium, omega-3 fatty acids and vitamin D.
- If ready to make lifestyle changes, give suggestions for including more plant-based foods and guide the client in setting an action plan. For example, "2 days a week, I will choose meatless dishes at dinner."
- Encourage the client to seek meal ideas from vegetarian magazines, websites, and cookbooks.
- At subsequent visits, assess nutritional adequacy, ensuring adequate protein, calcium, iron, B12, omega-3 fatty acids and vitamin D
- Build on current changes, by adding more meatless meals or fine-tuning choices to help reduce risk. For example, add oatmeal, barley, beans or soy to help reduce cholesterol.
- Reassess nutritional status regularly to reinforce benefits of lifestyle changes (lipid panel, blood pressure, weight).



Vegetarian Nutrition Resources-compiled by Reed Mangels, PhD, RD, LDN, FADA, Nutrition Advisor, The Vegetarian Resource Group and Debbie Lucas, MS, RD, CDE

Websites:

Vegetarian Nutrition Dietetic Practice Group of the American Dietetic Association www.vegetariannutrition.net
 Vegetarian Resource Group www.vrg.org
 VegFamily Magazine www.vegfamily.com
 Vegetarian Society of the UK www.vegsoc.org
 Recipe databases www.fatfree.com, vegweb.com
 Vegetarian Starter Kit available from www.pcrm.org/health/veginfo

For the General Public:

The New Becoming Vegetarian. Melina V, Davis B. Summertown, TN: Book Publishing Company, 2003.
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The Vegetarian Mother's Cookbook. Olson C. Nipomo, CA: GOCO Publishers, 2005.
Raising Vegetarian Children: A Guide to Good Health and Family Harmony. Stepaniak, J, Melina, V. McGraw-Hill, 2002.

For Nutrition Professionals:

Vegetarian diets in pregnancy and lactation. In: Sabate J, ed. Vegetarian Nutrition. Johnston PK. Boca Raton, FL: CRC Press, 2001; pp. 195-219.
 Position of the American Dietetic Association and Dietitians of Canada: Vegetarian diets. Mangels AR, Messina V, Melina V. J Am Diet Assoc. 2003; 103: 748-765.
A New Food Guide For North American Vegetarians. J Am Diet Assoc 2003;103(6)771-775.
The Dietitian's Guide to Vegetarian Diets, 2nd ed. Messina V, Mangels R, Messina M. Boston, MA: Jones and Bartlett Publishers, 2004.

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**Resource Review: www.vegetriannutrition.net
—Heather Baden, MS, RD, CDN**

It is not everyday that I find myself counseling a vegetarian patient. When I do, it is important to have appropriate resources in which to turn to provide my patients with timely and accurate information. I have found the vegetarian nutrition dietetic practice group website to provide just that. Even if you are not a member of the DPG the site gives you access to plenty of valuable information such as articles, fact sheets, links, research, and events.

The website contains a food feature of the month: Currently, berries are a focus. The site focuses on the nutritional contents of the food as well as cooking and storage tips.

Vegetarian Nutrition provides a variety of articles. A few key areas for women's health and reproductive nutrition include: Lifecycle Nutrition- Vegetarian Diets During Pregnancy, Essential Fatty Acids in Vegetarian Nutrition, Phytochemicals-Guardians of Our Health; and Iron and Zinc Bioavailability in Vegetarian Nutrition", just to name a few. I found the article "Vegetarian Diets During Pregnancy" by Dr. Reed Mangels, PhD, RD, FADA to be extremely thorough and informative. (See Reed's feature article on page one of this issue.)

The fact sheets include a wide range of topics including: vegetarian diets in pregnancy, vegetarian diets in lactation, dining out for vegetarians, quick vegetarian meals, vegetarian nutrition resources on the internet, just to name a few. Fact sheets can be ordered individually for \$2.00, or \$25 for the entire set. Professionals are given permission to photocopy these sheets for use in practice.

Vegetarian Nutrition offers several links to useful vegetarian websites. Topics include: published articles on vegetarian nutrition, events, vegetarian recipes and cooking, vegetarian online shopping, Current research on vegetarian nutrition is also provided.

I found this site to be extremely valuable. I believe many of us will be able to utilize the many resources offered by our colleagues in the Vegetarian Resource Dietetic Practice Group.

(Continued from page 9)

3. Messina, V, Mangels, R, Messina, M. The Dietitian's Guide to Vegetarian Diets: Issues and Applications, 2nd Edition. Jones and Bartlett Publishers, 2004.

4. Jenkins DJ, et al. Direct comparison of a dietary portfolio of cholesterol-lowering foods with a statin in hypercholesterolemic participants. Am J Clin Nutr.2005;81:380-7.

5. Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women, Expert Panel/Writing Group, Circ 2004;109:672-693.

Reflections on the 2006 ADA Leadership Institute —Cathy Fagen, MA, RD

Thanks to the WHRN DPG Executive Committee, I, along with Jamillah Hoy-Rosas, was selected to attend the 2006 ADA Leadership Institute for three full days in February. I have been involved in leadership positions with WHRN DPG since its inception, but I had never been to a leadership training. The training took place in a beautiful resort on Coronado Bay Peninsula in San Diego. We were given homework in advance to reflect on our own leadership styles and be prepared to learn new ways of communicating and leading others in our profession.

"a study on teenagers and the amount of time they spend on the computer, watching TV, playing videos, listening to music, text messaging, talking on the cell phone, instant messaging, etc. The amount of time averaged 31 hours per day"—Cathy Fagen

One of the points that really made an impression in my mind was a study on teenagers and the amount of time they spend on the computer, watching TV, playing videos, listening to music, text messaging, talking on the cell phone, instant messaging, etc. The amount of time averaged 31 hours per day. How can this be when there are only 24 hours in a day? They are multi-tasking! Sound familiar? I have become more aware of my multi-tasking when I should be giving a colleague my devoted and uninterrupted attention.

Both my work and my volunteer activities with ADA involve a lot of conference calls. As soon as I got back to work I put together a document to enhance the effectiveness of our conference calls. As Jamillah mentioned in the spring issue, we gained knowledge and skills from the ADA Leadership Institute that can be utilized not only in our ADA positions, but also at work and in our personal relationships.

I hope some day you will be given the opportunity to attend. It is vital information for everyone! I wish I could go again. The training is different every year but you can only attend once since it is limited to 300 ADA members annually.

(To read Jamillah Hoy-Rosas' reflections, check out the Spring 2006 Newsletter in the archives at www.whrndpg.org.)



Cathy Fagen (left) and Jeanne Blankenship



Announcements and Opportunities

- **Membership Survey: We Want to Know About You!** The Executive Committee values its members and **wants to learn more about you** as well as gather your suggestions for how we can better meet your needs. Members will receive an email with the link to the online survey and we encourage you to take a few minutes to provide us with your input. The information collected will be kept confidential and will be used to continue to improve and expand the efforts and the initiatives of our DPG. The survey will be available through July 24th. **We thank you in advance for taking the time to help us help you!** To request a paper copy of the survey, visit our website at www.whrndpg.org
- July 26-28, 2006. **National Maternal Nutrition Intensive Course.** Distance Education Opportunity Available. Minneapolis, MN. www.publichealthplanet/mnic.html
- August 19-22, 2006. **6th Annual CityMatCH Urban Maternal and Child Health Leadership Conference.** Providence, RI; www.citymatch.org
- September 19-21, 2006. **National WIC Association Nutrition and Breastfeeding Conference** Phoenix, AZ. www.nwica.org
- Request for Applications for the Targeting Obesity in Young Women to Prevent the Development of Type II Diabetes Program- The Office on Women's Health anticipates making, through the cooperative agreement grant mechanism, **new annual awards for the creation or sustainment of obesity programs for young women, ages 16-24.** Funds to be awarded no later than 09/01/06. Approximately \$490,000 is available to make five awards of up to \$98,000 total cost (direct and indirect) for a 12-month period. Eligible entities may include: for profit and not for profit community based organizations, national organizations, colleges and universities, clinics and hospitals, research institutions, State and local government agencies, tribal government and tribal/urban Indian entities, and faith-based organizations. Application kits may be requested by calling (240) 453-8822 or writing to: OPHS Office of Grants Management, 1101 Wootton Parkway, Suite 550, Rockville, MD 20852. Requests may also be submitted by FAX at (240) 453-8823.
<http://a257.g.akamaitech.net/7/257/2422/01jan20061800/edocket.access.gpo.gov/2006/pdf/E6-9640.pdf>

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