Vegetarian Nutrition Update
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Our understanding of the gut microbiome and its relationship to health and wellness has greatly expanded within the past decade.

We now understand that gut microbial balance is integral to human health, as certain species of bacteria can produce vitamins and short-chain fatty acids, maintain and modulate immune system cells, and help maintain the gut epithelial barrier (1). The gut microbiome is currently being studied for its role in metabolic, digestive, and liver health, as well as for its role in diabetes and colorectal cancer (CRC) prevention and management. This review summarizes key findings in each of these areas of research and also discusses key prebiotic and probiotic food sources found in a plant-based diet.

What are probiotics and prebiotics?

Probiotics are live microorganisms that, when administered in adequate amounts, confer health benefits on the host. The human microbiome is the collection of all of the microbes (and their genes) found within the human body (2).

Prebiotics are non-digestible carbohydrates that when fermented, change the composition and/or activity of the gut in a way that is beneficial to the host (2). Examples of prebiotics include inulin, oligofructose, cellulose, and galactofructose.

Prebiotics provide energy for bacterial growth and also yield short-chain fatty acids such as butyrate, acetate, and propionate. These short-chain fatty acids have been shown to help reduce inflammation and modulate the immune system in a way that is beneficial to the host (3, 4).

Metabolic health and weight management

There is growing evidence that diet can influence the gut microbiome in a way that significantly impacts metabolic balance and weight management. Furthermore, significant differences in microbiome makeup are seen in plant-based versus animal-based diets (5, 6).

A “western obesogenic diet” (animal-based, rich in saturated fats, trans fats, and simple sugars and lacking in dietary fiber) is associated with a change in the gut microbiome that leads to metabolic endotoxemia and increased gut permeability, systemic inflammation, insulin resistance, and weight gain (5, 7, 8, 9).

The gut microbiota itself has also been shown to influence host body weight in animal studies. Lean mice colonized with intestinal flora from heavier mice developed increased body fat, triglyceride production, and insulin resistance independent of food intake (5).

Results from human trials looking into the role of probiotics and metabolic health are mixed but indicate that the gut microbiome of overweight individuals may lead to increased sugar and carbohydrate metabolism and an increased capacity to harvest energy from food (5, 10).

Overweight subjects may also display reduced microbial diversity in the gut and associated increases in adiposity, insulin resistance, and inflammation (5, 10, 11).

Research strongly indicates that a western, animal-based diet leads to gut dysbiosis, metabolic endotoxemia, inflammation, insulin resistance, weight gain, and
metabolism in patients with type 2 diabetes. Symbiotic may help restore gut symbiosis while improving glucose Recent studies indicate that treatment with probiotics and increased gut permeability (16). metabolic endotoxemia, inflammation, insulin resistance, may be induced by a high fat diet and are associated with waist-to-hip ratio. These alterations to the gut microbiome in independent of body mass index, waist circumference, and diabetes display gut dysbiosis Clinical trials have concluded that probiotics such as VSL#3 nonalcoholic steatohepatitis (NASH) have been promising. Although large human trials are needed, preliminary studies have supported the conclusion that patients with IBD experience changes in the gut microbiome but it remains unclear whether prebiotics and probiotics are an effective and appropriate treatment for most IBD patients.

Liver health and nonalcoholic fatty liver disease

Because 70% of the liver’s blood is delivered from the portal vein, gut bacteria play an integral role in hepatic health. The portal vein gives gut microbes and gut-derived metabolites a constant entryway into the liver. Liver Kupffer cells are usually able to eliminate small amounts of these bacteria and their metabolites but they can become overwhelmed when influx is too great, as is often the case with excessive damage to the gut epithelial barrier (3).

Although large human trials are needed, preliminary studies evaluating the effects of probiotic treatment for patients with nonalcoholic fatty liver disease (NAFLD) and nonalcoholic steatohepatitis (NASH) have been promising. Clinical trials have concluded that probiotics such as VSL#3 reduce liver fat deposits and help reduce oxidative and inflammatory liver damage in patients with NAFLD (3, 15).

Diabetes and insulin resistance

Patients with type 2 diabetes display gut dysbiosis independent of body mass index, waist circumference, and waist-to-hip ratio. These alterations to the gut microbiome may be induced by a high fat diet and are associated with metabolic endotoxemia, inflammation, insulin resistance, and increased gut permeability (16).

Recent studies indicate that treatment with probiotics may help restore gut symbiosis while improving glucose metabolism in patients with type 2 diabetes. Symbiotic foods containing prebiotics and probiotics are associated with significant reductions in glycemia, along with increases in high-density lipoprotein (HDL) cholesterol in human subjects. (16, 17).

Colorectal cancer

Recent studies have identified a pro-oncogenic microbiome in which specific species of bacteria are found in higher levels in the CRC population. These bacteria have been shown to promote inflammation, angiogenesis, cell proliferation, and colonic tumorigenesis (2).

Probiotics, especially a strain of Lactobacillus casei, may confer anti-cancer benefits on the host by augmenting the immune response in an immunocompromised state or by down regulating an overactive immune response in an inflammatory state (1, 18). This flexible response could play a beneficial role to the host in CRC prevention and treatment.

Diet and its resulting effects on the gut microbiome may also heavily influence CRC risk. One study showed that a cancer biomarker was decreased in African Americans who followed a high-fiber (plant-based) diet for two weeks. Interestingly, this same cancer biomarker increased in rural Africans after they transitioned from a plant-based diet to a westernized high fat, high protein, low fiber (animal-based) diet (2, 19).

Plant-based sources of probiotics and prebiotics

Fermented dairy products, such as yogurt, kefir, and aged cheeses, are commonly listed as probiotic food sources but a number of plant-based options also exist.

Tempeh, miso, kimchi, sauerkraut, and kombucha tea are all suitable choices for vegans, patients with a lactose intolerance or dairy allergy, and the general public alike. Prebiotics, such as inulin and galactooligosaccharides, are found in a wide variety of plant-based foods and can also help promote a healthy gut. Choose a variety of whole, plant-based foods with an emphasis on foods rich in nondigestible carbohydrates, such as bananas, onions, garlic, leeks, asparagus, artichokes, wheat, and soy to maximize prebiotic intake.

Conclusion

Recent research on the gut microbiome has shed light on the integral role that probiotics play in supporting health and wellness, especially within the realms of metabolic health, inflammatory bowel disease, nonalcoholic fatty liver disease, diabetes, and colorectal cancer.

While preliminary studies are promising, more human randomized clinical trials are needed in order to better understand the efficacy of probiotic and prebiotic administration for disease prevention and treatment.
Along with the inclusion of fermented foods, a plant-based diet rich in fiber and low in saturated fats, trans fats, and simple sugars seems to be particularly supportive of optimal gut health and its related health benefits.

References available at end of newsletter.

Stephanie McKercher, MS, RDN, is a private practice registered dietitian nutritionist based in Boulder, CO. Stephanie has a background in integrative oncology and plant-based wellness and offers private nutrition coaching services to clients throughout the United States who are looking to embrace whole foods and intuitive eating. Stephanie also shares her favorite healthy plant-based recipes and nutrition advice on her blog, The Grateful Grazer.

Message from the Past Chair

The seasons change from spring to summer, and you’re offered up a bounty of wonderful plant foods. Depending on where you live, summer means an abundance of berries, cherries, tomatoes, and peaches. And of course, you can’t forget about that summer superstar, the juicy, thirst-quenching watermelon. Sweet, ripe summer fruits offer great nutrition to feed the body and the soul. Due to the warmer weather, summer food is usually lighter with a greater focus on cool and refreshing foods. It’s a great time to promote eating more farm-fresh plant produce.

June is the month of transition for our DPG with new Executive Committee members and officers coming into their new positions as others complete their service for VN or take on new roles. This includes my position as Chair. June 1st marked the day that I officially turned the Chair position over to Ginger Hultin, MS, RDN, CSO. Ginger has done a great job this past year as your Chair-Elect and I am sure she will do a fantastic job as VN’s new Chair. Please give Ginger your support and volunteer help as she assumes her new role. I look forward to working with Ginger and the Executive Committee in my new role as Past Chair. As I step into this new position, I wish to thank Amy Rose Sager, RDN, LDN, CLT for the work and contributions she has made in serving VN as Past Chair this past year.

It has been an honor to serve you this past year as Chair. It truly has been the highlight of my professional career as an RDN. It was my early interest and passion for vegetarian nutrition that motivated me to pursue nutrition and dietetics as a career, so being VN’s Chair has been especially meaningful to me. I thank you for trusting in me and giving me your support to lead VN this past year. I am very biased, but I have always believed that VN is one of the most important DPGs in the Academy. As we move forward in the science of nutrition and medicine, scientific research is establishing that vegetarian nutrition is the more optimal dietary approach to prevent, treat, and even potentially reverse many of the diseases we face today. Not only does a plant-based dietary lifestyle promote more optimal health, but it also contributes greatly to the promotion of a healthier planet as well. Vegetarian Nutrition has a bright future ahead. Please continue your membership and support of VN. Invite your friends and colleagues to join VN as well. As VN grows, so will our influence within the Academy, to other health professionals and to the general public.

Have a wonderful summer!
Message from the Chair

Hello, VN members!
Welcome to our 2016-2017 program year. I am thrilled to serve as your chair this year and look forward to working collaboratively together. I have been so honored to work with past chair John Westerdahl and the rest of our leadership team over the past year learning about the intricacies of how the organization works and becoming involved in every position and committee.

I have a deep passion for this work; one of my earliest memories is of declaring myself a vegetarian as a young child to the surprise of an omnivorous family. Recently, I worked in an integrative oncology clinic where we educated clients going through treatment on the benefits of a vegetarian diet for support through healing and prevention of recurrence.

As I’ve become ever more deeply involved with this DPG, I’ve found there is a lot that goes on behind the scenes. From creating and constantly monitoring the budget to preparing an annual report for our members, we are constantly in action. From managing conference calls, contracts and governance documents to planning FNCE® events and a spring leadership retreat, life in DPG leadership is never boring!

Member feedback is incredibly valuable to us. The yearly membership report informs our areas of focus and the changes we make to our programming. We heard that you want more webinars so we’re planning one to launch this year. We heard that you value the newsletter, so we budgeted to add more pages. Our members are the driving force for what we do in VN leadership so please continue to provide your feedback. Are you interested in becoming involved in VN leadership? We are always looking for members who want to volunteer in a variety of positions. If you are interested in learning more about opportunities, please contact John Westerdahl or myself.

VN is a unique DPG; we are a collection of professionals interested in a vegetarian diet. With a diverse background of experience, specialty areas and clientele, some of us practice in a plant-based setting while others follow vegetarian diets, participate in research or want to know more about vegetarian diets to help their clients. You don’t have to be meat-free to join VN DPG – we welcome practitioners from all backgrounds, no matter their dietary preferences. My goal this year is to practice inclusivity, transparency and to have fun together as we work on spreading the word about the many benefits of vegetarian nutrition. I look forward to getting to know all of you better and hope to see many members at FNCE® for our spotlight session and our member meet-up on Saturday night. Please contact me anytime with questions or feedback.

Here’s to a wonderful year!
Ginger

Ginger Hultin, MS, RDN, CSO
2016-2017 VN DPG Chair

VN DPG Vision
To optimize global health and well-being by creating and disseminating vegetarian nutrition educational materials, supporting cutting-edge research and developing influential policy.

VN DPG Mission
To empower members to be the leading authority on evidence-based vegetarian nutrition for food and nutrition professionals, health practitioners and the public.
From the Editor

Debbie Lucus, MS, RD, CDE

I hope this issue of the Vegetarian Nutrition Update finds you enjoying the summer and all that it entails: fresh fruits and vegetables at the Farmers’ Market, produce growing in your garden, trips to your favorite places and maybe a little time off to catch up on reading.

You will find a wide variety of articles in this issue to keep you busy. They highlight the vast knowledge of our members whether you will be learning something new or just getting a refresher on the value of plant-based diets for health, the environment and your community.

In addition to the articles and columns, please be sure to check out our new Executive Committee members and get to know them. They are working hard to plan a great year for VN. We are also adding a new column – Membership Connections, which will be written by our Membership Chair, Irana Hawkins, PhD, MPH, RD.

Enjoy your summer read!

Debbie
Meet your Executive Committee

Past Chair

John Westerdahl, PhD, MPH, RD, FAND • Santa Barbara, CA

A graduate of Pacific Union College and Loma Linda University School of Public Health, John’s degrees are in the fields of food, nutrition and health education. With an interest in spiritual wellness and its relationship to health, John also has an MA degree in religion. He serves as a consultant to Bragg Live Food Products and the Bragg Health Foundation. He has previously served as Director of Wellness & Lifestyle Medicine and Nutritional Services for Castle Medical Center in Hawaii, Director of the Murad Inclusive Health Center and Murad Inclusive Health Medical Group in Los Angeles, Senior Nutritionist for the Shaklee Corporation, Director of Nutrition for Dr. McDougall’s Right Foods in San Francisco, and Nutrition Editor for Veggie Life Magazine. He was also the staff nutritionist for Millennium Restaurant, San Francisco’s premier vegetarian cuisine restaurant and coauthored the book, The Millennium Cookbook: Extraordinary Vegetarian Cuisine. His popular radio talk show, Nutrition and You, and television show, Tasty and Meatless, reached thousands every week throughout the Hawaiian Islands. John’s weekly national radio talk show, Health & Longevity, is broadcast on the LifeTalk Radio network. For several years he served as the VN State Coordinator for Hawaii and California and was the first recipient of the Cyndi Reeser Outstanding State Coordinator of the Year Award. In addition to his membership in the Academy, John is an active member in the American College of Nutrition and the American College of Lifestyle Medicine. His 18-year-old daughter Jasmine (a lifelong vegan) is starting college this fall to study Nutrition and Dietetics and become active in the VN!

Chair

Ginger Hultin, MS, RD, CSO • Seattle, WA

Ginger is a nutrition writer in Seattle, Washington. She works at a scientific wellness company, Arivale, and supervises nutrition students at the Bastyr Center for Natural Health. Ginger has been involved in the VN DPG as a past-Illinois State Coordinator and she won the State Coordinator of the Year award for 2013-14. She was the President of the Chicago Academy of Nutrition and Dietetics in 2014-15 and was honored with the Recognized Young Dietitian of the Year Award at the Illinois Spring Assembly for 2014-15. Ginger holds a Bachelor of Arts degree in English from the University of Washington and Master of Science degree in dietetics from Bastyr University. She is passionate about cooking for plant-based diets, the science of supplementation, oncology nutrition, nutrigenomics, and social media. When she’s not writing, teaching or working at Arivale, Ginger enjoys traveling and exploring new restaurants in the Seattle area.

Chair Elect

Carolyn Tampe, MS, RDN, CDE, PA-C • Denver, CO

Carolyn Tampe is a Registered Dietitian Nutritionist, Certified Diabetes Educator, and Certified Physician Assistant. She served as State Coordinator Chair for VN DPG from 2012-2016 and, prior to that as State Coordinator for Illinois. She currently works as a Physician Assistant (PA) at Endocrinology Specialists of Colorado. Before becoming a PA she worked full-time as a Dietitian and Diabetes Educator at various outpatient clinics outside Chicago, IL. She also co-founded the nutrition consulting company Aeon Nutrition, through which she helped many transition to plant-based diets. Carolyn served as President of the Chicago Academy of Nutrition and Dietetics from 2011-2012; in 2011 she was selected as “Recognized Young Dietitian of the Year” by the Illinois Academy of Nutrition and Dietetics. Carolyn currently enjoys hiking, yoga, and exploring the Front Range after relocating to Denver in December 2015.
Secretary

**Karla Dumas, RDN, LDN • Sarasota, FL**

Karla Dumas is a registered and licensed dietitian nutritionist with The Humane Society of the United States. With ten years of experience in the field of child nutrition and school food service management, she now partners with foodservice programs throughout the country, like Miami-Dade Public Schools, Hillsborough County Public Schools and Hoover City Schools to implement plant-strong initiatives. By developing resources like menu cycles and kid-tested, school-approved meatless recipes that meet federal guidelines, she continues to provide school districts and other institutions with more plant-based meal options. Karla holds a Bachelor of Science degree in dietetics from The Florida State University and a plant-based culinary certification from Rouxbe. Karla’s work in nutrition has been featured in numerous media outlets, such as Tampa Tribune, Today’s Dietitian, and the Miami Herald. Karla enjoys spending her free time running, gardening, cooking, candle-making and camping with her husband, stepdaughter, and seven adopted pups!

Treasurer

**Debbie Petitpain, MS, RDN, LDN • Charleston, SC**

Debbie is a registered dietitian with Sodexo at the Medical University of South Carolina (MUSC) in Charleston. She is in a newly created position of Wellness Dietitian in the Office of Health Promotion where she develops policies and programs to advance health on the MUSC campus and in the community. In her work as a dietitian over the last 11 years, she has provided direct patient care to individuals undergoing dramatic diet and lifestyle changes in an effort to lose weight, improve their medical problems, and get healthier. At home, she and her husband are examples for their two young daughters of how food nourishes the body, gives us energy, helps us grow and connects us to our community. Debbie graduated from the College of Charleston, received her Master’s in Nutrition from Boston University and completed her dietetic training in Honolulu, Hawaii. She has been a member of the VN DPG since 2000, serving as Secretary and a member of the Nominating Committee, and a writer for the newsletter. She believes the healthiest foods are those that come from as close to the ground as possible – and require a fork to be eaten!

House of Delegates

**Linda Arpino, MA, RDN, CND, FAND • Stanford, CT**

As Incoming Delegate, Linda Arpino is looking forward to serving the members of the Vegetarian Nutrition Dietetic Practice Group. Linda is CEO and founder of Life Focus Nutrition, LLC and has been in practice for over 30 years. She is recognized for her expertise in weight management, dyslipidemias, neurological disorders, and plant-based eating by pediatricians, physicians, and other health care professionals. She serves on evidenced-based analysis committees of the Academy of Nutrition and Dietetics, serves as the reimbursement representative for the Connecticut Dietetic Association and is devoted to analyzing credible research to provide professional guidelines in medical nutrition therapy. Linda is a motivational speaker not only for media, but also for worksites and professional organizations with emphasis on plant-based eating. In June 2016, she spoke to the Pediatric Society in Westchester, NY, with a talk entitled, “Role of the Plant-Based Diet in Coronary Artery Disease Reversal.” With degrees in nutrition from Syracuse University and a Masters at New York University, Linda has advanced training certifications in weight management for children, teens and adults and a fellowship in Leadership of Neurological Disorders.
State Coordinator Spotlight

The State Coordinator Program: One of VN DPG’s Fantastic Member Benefits!

State Coordinators help you network and connect with local VN DPG members. State coordinators organize in-person meet-ups, as well as host Facebook pages for members in your state. State coordinators connect you to the DPG by sharing information such as new resources and volunteer opportunities. State coordinators keep you up-to-date on the happenings at VN!

This year VN DPG State Coordinators exhibited at 14 state Academy meetings! The following states had a VN DPG exhibit: Arizona, California, Colorado, Florida, Illinois, Indiana, Kentucky, Louisiana, Massachusetts, Nebraska, New Mexico, North Carolina, Oregon/Washington, and Texas. RDNs and students attending the meeting picked up copies of VN’s professional resource “The Safety of Soy,” information on VN’s member benefits, magnets with the VN member website (www.vndpg.org), and our free website for the public (www.vegetariannutrition.net). VN DPG also had an exhibit at the Plant-Based Prevention of Disease Conference held on May 19-22; doctors and other health professionals in attendance learned that VN DPG members are the leading experts in vegetarian nutrition.

Serve as State Coordinator

Are you interested in representing VN DPG on a local level and connecting with other members in your state? Are you passionate about promoting vegetarian nutrition? If so, consider becoming a State Coordinator! There are currently states with open positions. Serving as State Coordinator is a great first step in getting involved with the VN DPG, and many coordinators have gone on to serve in other leadership roles. If you are interested, please contact State Coordinator Chair, Taylor Wolfram (taylor.wolfram@gmail.com).

“I have truly enjoyed being Southern California State Coordinator. The biggest perk was getting to host a VN booth at the California AND conference. I was impressed with the amount of people who are using our RD Resources and referring their clients, students, and friends to our consumer website. I made lasting connections with like-minded individuals who believe in plant-based diets and are passionate about sharing their knowledge with the public.”

– Christine Bou Sleiman, MS, RD

“It is an honor to serve in a leadership capacity to promote plant-based nutrition and VN DPG on the local level. I especially enjoyed exhibiting at Arizona’s AND meeting and sharing our amazing educational resources that address common questions and topics related to vegetarian diets. I’m very proud to be part of such a great organization!”

– Heidi Lynch, MS, RD, Arizona State Coordinator

“Serving as State Coordinator for VN DPG is proving to be a rewarding and gratifying experience. It is a great way to network and interact with other members in your state. The State Coordinator program offers a wonderful opportunity to gain leadership experience and managerial skills.”

– Rebecca Lamoreux, dietetic intern/graduate student, New Mexico State Coordinator
Vegetarian Diets in Pregnancy and Lactation

By Melinda Boyd, MPH, MHR, RDN

Maternal health, including nutrition status, serves as an indicator of healthy pregnancy outcomes and has the ability to impact child health over the long term (1, 2).

Nutrition in pregnancy and lactation is an important area of focus in the field of nutrition as the interventions extend beyond just one individual. Nutritional status during pregnancy impacts the developing fetus and continues to influence the growth and health of the infant after delivery (1). According to the Centers for Disease Control and Prevention (CDC), data collected in 2011 across 8 states showed that only between 30-40% of women spoke with healthcare providers before becoming pregnant about preparations for healthy pregnancy outcomes (3). This may put many women at a disadvantage for achieving a healthy pregnancy, particularly if they don’t seek advice on healthy behaviors until after they are a few weeks into their pregnancy.

Individuals may follow a vegetarian diet for many reasons. These include multiple health benefits, such as improved cardiovascular health and a decreased risk of developing diabetes, obesity, and some forms of cancer (4). Additionally, this diet may be followed for other personal reasons not related to health such as ethical or religious reasons. It is therefore likely that vegetarian women who become pregnant will choose to continue following a vegetarian diet throughout their pregnancy and during lactation.

For any pregnant or lactating female there are important concerns with nutrition; however, for women following a vegetarian diet, additional concerns may arise. Dietitians with experience in vegetarian diets can serve in a unique role helping to educate pregnant and lactating clients on the safety and benefits of following a vegetarian diet throughout this stage of the lifecycle. This includes promoting healthy weight gain and ensuring adequate consumption of key nutrients (2). Women may find that family members or friends are unfamiliar with vegetarian diets and aren’t supportive of their decision to exclude animal products from their diet. Social support is one factor that impacts one's ability to maintain a vegetarian diet (5). This can be overwhelming during an already stressful time for a woman. High stress in pregnancy can also result in poor dietary choices (6). Dietitians can help clients hoping to follow a vegetarian diet throughout their pregnancy and during lactation by providing support and assistance in carefully planning a diet to balance the increased nutritional needs of pregnancy and lactation with the added needs of vegetarians.

Pregnancy

Proper nutrition is essential to healthy pregnancy outcomes. According to the Academy of Nutrition and Dietetics, vegetarian diets, including a strict vegan diet, are adequate to meet nutritional needs during pregnancy (1, 2). Key nutrients of concern in pregnancy include iron, folate, zinc, vitamin B-12, and vitamin D (Table 1) (2). Most of these nutrients also align with key nutrients of
concern in vegetarian diets. With planning and guidance, a vegetarian diet can meet the needs of pregnant women (2). Supplementation may be considered in cases where it is known that dietary intake will not be adequate (2).

In addition to meeting nutrient needs, appropriate weight gain plays a role in maternal and fetal health (8, 9). Recommended weight gain is based on pre-pregnancy body mass index (BMI) (Table 2) (10).

One way to ensure proper weight gain is to ensure that energy needs are met, but not exceeded. Energy needs increase by 340 kcal/d in the second trimester and 452 kcal/d in the third trimester, over non-pregnancy needs (2). Vegetarian diets have been associated with lower BMIs (4). Stube et al. (n=1388) found that a vegetarian diet in the first trimester was inversely associated with excessive maternal weight gain, with no relationships found for the second and third trimesters (9). Vegetarian diets were also associated with a decreased amount of total weight gain (9). For pregnant obese women and those at risk for excessive maternal weight gain, a vegetarian diet may be an option for managing weight during pregnancy.

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Iron</th>
<th>Folate</th>
<th>Zinc</th>
<th>B-12</th>
<th>Vit D</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>RDA = 27 mg/d</td>
<td>RDA = 600 ug/d</td>
<td>RDA = 11 mg/d</td>
<td>RDA = 2.6 ug/d</td>
<td>RDA = 600 IU/d</td>
</tr>
</tbody>
</table>

Considerations in Vegetarian Diets

| Vegetarian/Vegan Sources | beans (many varieties including chickpeas/garbanzo beans), enriched cereals, lentils, soybeans, kale | avocado, beans (many varieties including chickpeas/garbanzo beans), broccoli, enriched flours, lentils, spinach | cashews, chickpeas (garbanzo beans), fortified cereals, lentils, oatmeal, sunflower seeds, tofu | dairy, eggs, fortified cereals, fortified nutritional yeast | egg yolk, fortified dairy alternatives, fortified orange juice, fortified cow's milk, mushrooms (exposed to UV light) |

Table 1. Key nutrient recommendations in pregnancy and adjustments for vegetarian diets (2,7)

Lactation

Nutrition needs change during lactation as well. The World Health Organization recommends exclusive breastfeeding until 6 months and may continue once complementary feeds are started (10). Offering support to clients who wish to breastfeed is an important factor to their success in continuing to feed until at least the 6-month mark (11). Providing education on a healthy diet is similar to meal planning during pregnancy. Therefore, a client or patient that had been following a vegetarian diet during pregnancy and meeting nutrient needs will not have significant concerns with following this diet. In cases where this is a new change after delivery, additional care should be taken to make sure a new mother understands her risks for deficiency of nutrients if she is limiting her diet too much. Knowing which foods to consume to meet micronutrient needs, as well as what vegetarian food items provide protein, will help to ensure she is meeting her needs to support lactation. As with pregnancy, a vegetarian diet can be adequate to meet the needs of a lactating woman.

Energy needs in lactation are increased over those in the third trimester of pregnancy. The estimated needs are roughly 500 kcal/day for the first 6 months and 400 kcal/day after this to produce an adequate milk supply (12). When an allowance is made to support 0.8 kg/month weight loss, the 2002 DRI is 330 kcal/day (over non-pregnancy needs) in the first 6 months for women at a healthy weight or with appropriate gestational gains and allows for weight loss after delivery (12). In women with low gestational weight gains or those that are malnourished, the World Health Organization recommends an additional 675 kcal/day to meet energy needs in the first 6 months (12). A nutrient
of concern in vegetarian diets during lactation is vitamin B-12 (DRI increases to 2.8 ug). Calcium and vitamin D recommendations remain the same as during pregnancy while the recommendation for protein is the same as it is during the 2nd and 3rd trimesters (7). Iron recommendations decrease, from 27 mg/day to 9 mg/day (7). Vegetarians' iron needs will still be slightly higher for vegetarians to account for exclusive use of non-heme sources.

Foods should be selected to be nutrient- and energy-dense in order to meet needs. During the period of adjustment to a new schedule, it is not uncommon for new mothers to skip meals or adjust their meals to be more sporadic or consumed when time permits. Meals and snacks should be carefully planned so energy needs are met, as this will help with breastfeeding success. As with pregnancy, family and friends may be less supportive of a vegetarian diet that may appear to be restrictive. Proper support and education from a dietitian or other health professionals will be integral to achieving successful breastfeeding habits. See Table 3 for a sample 1-day vegetarian menu.

Conclusion

Both pregnancy and lactation are critical stages of the lifecycle for both the mother and baby. It is important for women to receive proper education on general nutrition for both stages. It is the opinion of this author that in cases where a vegetarian or vegan diet is followed, even more care should be taken to ensure nutrition needs are met. Vegetarian diets are adequate to produce healthy pregnancy outcomes, and to support proper infant feeding during lactation (1, 2). Appropriate weight gain is important and vegetarian diets can aid in managing weight during pregnancy. Alternate sources of critical nutrients should be addressed in counseling. By providing support of the decision to maintain a vegetarian diet throughout pregnancy and lactation, clinicians can help with the success of their clients and patients.

References available at end of newsletter.

Melinda Boyd, MPH, MHR, RDN, is a military spouse living overseas. During her 4 years in Japan she gained extensive knowledge in the area of maternal health while working with the WIC Overseas Program. Her additional areas of practice include weight management, vegetarian nutrition, and diabetes, with a special interest in gestational diabetes. She is currently a student in the Doctorate of Clinical Nutrition program at Rutgers. She is the International Coordinator for the VN DPG and President-Elect of the American Overseas Dietetic Association.
Membership Connections

By Irana Hawkins, PhD, MPH, RD, Membership Chair 2016-2017

Thank you for participating in the recent member survey!
Over 160 VN DPG members responded. Your insights will help guide us in the 2016-2017 membership year.

The primary reason selected for being a member of VN DPG:
To keep current and up-to-date on research and resources.

Other reasons included (in descending order):
- Personal interest in vegetarian nutrition and/or personally being vegetarian
- Client education & practice needs
- Support, camaraderie & networking
- Chronic disease prevention
- Personal interest in vegan nutrition and/or personally being vegan
- Care of the planet & environmental sustainability
- Non-violence/compassion & animal welfare/ethics
- Continuing education

What you find most useful (top 5):
1. The quarterly newsletter
2. The RD Professional Resources
3. The RD Consumer Resources
4. The VN DPG website
5. The monthly web updates

Save the Date!

VN DPG Member Reception at FNCE®
Saturday, October 15, 2016, 5:30-8:30 P.M.
Location: Westin Boston Waterfront Hotel, near FNCE® Convention Center
Come meet new colleagues and old friends. We can’t wait to see you there!

Thank you for your membership. It is because of you that we are strong!

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VN Students

Creating Opportunities: Plant-Based Cooking Classes

By Kevin Richie

As an undergraduate, I was dismayed by the lack of opportunities to share my enthusiasm about plant-based diets with others.

There were opportunities to feed the poor, understand food systems, and share the MyPlate diet guidelines, but I did not get to showcase the health benefits of a plant-based diet. Time was my enemy for this endeavor; exams, class projects, homework, and a part-time job took priority. Now that summer is here, I am free to create my own plant-based opportunity. I have opted to teach/present a cooking class at my church. After speaking to several members, I learned there is general interest, but there is also a knowledge/skill gap with general food preparation. In order to bridge this gap, I am planning a plant-based cooking class that showcases knife and cooking skills.
If you have completed your community nutrition classes, you may already understand how to set up an intervention. I will be using this type of methodology for my cooking class. Basic food preparation skills include: knife skills, baking, food processor usage, and assembling.

Here are some aspects of setting up an intervention that are useful to consider:

**Venue:** Where do you want to have your plant-based event? I am doing mine at a church because we have a large commercial-quality kitchen. It is spacious enough to hold 10-12 people with ample room for multiple recipe stations.

**Audience:** During potlucks at this church, my family is known as the “Veggie People.” Unfortunately, if I am not the first person in line, I will not have anything to eat because others eat my dish before I can get to it. This monthly experience tells me people want to eat more vegetables, but may not know how.

**Audience Age and Experience:** Teaching a young single man is quite different than teaching an older married woman because there is a different set of life experiences shared between the two. When setting up a lesson plan, consider who will likely attend and their level of skill and knowledge.

**Time:** An often-overlooked element in planning is time. Consider if this is a series of classes happening every month or just one session. Set a time limit on how long the session should be and consider if the participants will be standing or sitting. Participants in your event will want to know if they have time afterwards to do other things, so make it a reasonable amount of time. Also, check for conflicting holidays that may compete with your event (i.e., Independence Day weekend).

**Lesson Plan:** This allows you to specify the objective, and determine cost, tools, and other items you might need. Keep the lesson plan simple; it is very easy to go off on a tangent and not meet your objective. Feel free to share your lesson plan with people who may have key information to help stay on track.

**Cost:** Keep a running budget of any expenses and always practice due diligence to keep the cost down as much as possible. You should not make a profit on this activity, but at the same time you should not use your own money. You can always see if the facility has money to cover the cost or charge a small fee per participant. In my cooking class, I will charge an ingredients fee and participants will be allowed to take home what they cook.

**Tools:** If you want to have a juicing class, you will need a juicer and a lot of produce. If your theme is desserts, you will need lots of ingredients, at least one oven, mixing bowls, spoons, and measuring cups. How about a mango-themed class? You will need a lot of mangos. I have decided to do a basic introduction to plant-based cooking that will involve mixing, cutting and baking. I want to show participants that they do not need to buy anything special to have a plant-based meal. My venue will have the major appliances needed. I will have my participants bring their own knife and cutting board. I will bring my own food processor, blender, and 3-ring binder with research articles that can be found in the VN DPG “RD Resources” area of the website that can help answer any questions about this diet.

**Evaluation:** One common problem with interventions is measuring the success of the outcome. In order to do this, start with a pre-test related to the objectives and information you want to the audience to learn. It should not be too difficult or too long. After your event, provide the same test, so you can compare pre- and post-test results that hopefully show marked improvement. Also, the post-test should give you feedback on your organizational skills so you can improve.

There has never been a greater opportunity to share your passion about plant-based diets than now. Meat consumption per capita is down and interest in vegetarianism is on the rise. People need an ambassador to teach them—why not you?

There are many benefits of taking this opportunity into your hands: it will bolster your personal statement and resume, and can be included in a letter of introduction. Utilizing the measurements of success with a pre- and post-test gives you solid numbers that make you more competitive for the next internship match or help you land your dream job!

Kevin is a graduate student at the University of Kentucky, and is the Kentucky State Coordinator for the VN DPG. He is striving to be the plant-based ambassador to the Kentucky-Indiana area.

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**Letters to the Editor**

Have you ever wanted to comment on something you read in *Vegetarian Nutrition Update*? Want to share a new resource?

**Please drop us a note – we welcome letters to the editor.** Please send any questions or comments to the Vegetarian Nutrition Update editor at dlucusrd@gmail.com.
Advocates of plant-based diets often claim that autoimmune diseases can be prevented and treated by avoiding animal products. These claims are frequently bolstered with anecdotal evidence of diseases miraculously cured through dietary change. While these stories are compelling, as dietitians committed to evidence-based practice, we need to consider the full body of evidence in evaluating these claims.

This article aims to present a more nuanced depiction of the role that a plant-based diet might play in treating autoimmune disease, focusing on multiple sclerosis (MS). The aim of this article is not to advocate for or against the use of any particular diet for MS. Such advocacy would be premature given the current state of the evidence, particularly the lack of well-designed randomized controlled trials of dietary interventions (1). Instead, this article intends to explore some of the research on nutrition and MS, and to contemplate the potential strengths and weaknesses of a plant-based diet in light of these findings.

Background

MS is an inflammatory autoimmune disease characterized by damage to the central nervous system, particularly the myelin sheath of neurons, causing gradually worsening disability in most patients (2). MS is thought to be caused by a complex interaction of genetic and environmental factors, including exposure to cigarette smoke and the Epstein-Barr virus, but the exact etiology remains unknown (2,3).

Interest in diet and MS dates back to at least the 1950s, when the physician Roy Swank began treating his MS patients with a low saturated fat diet. Swank followed 144 of his patients for 34 years, and concluded that patients who adhered to his diet experienced less disability and fewer deaths than his less-compliant patients (4). Although the long duration of Swank's study is remarkable, flaws in the study design—most notably the lack of a true control group—limit its usefulness.

Swank's diet was based on his own epidemiological study of MS in Norway, in which he observed high rates of MS among those who routinely consumed butterfat (5). Swank was not alone in observing a relationship between high saturated fat diets and MS. An epidemiological study conducted in 36 countries in the 1980s found an association between MS mortality and intakes of saturated and animal fats (6). Other epidemiological studies noted a correlation between dairy product consumption and MS occurrence (7,8). Not all studies have borne out these relationships, however. Data from two large cohort studies, the Nurses' Health Study I and Nurses Health Study II, showed no relationship between risk of MS and intakes of saturated fat, polyunsaturated fat, omega-3 fatty acids, dairy products, fish, or meat (9).

MS and the “Western diet”

Some have proposed that a “Western diet,” characterized by high intakes of calories, fat, and salt, may be an environmental factor contributing to the development and progression of autoimmune diseases such as MS in susceptible individuals (10).

Some evidence supports a possible connection between MS and high intakes of energy, fat, and salt. Obesity in adolescence has been identified as a risk factor for the development of MS in adulthood (11,12), and childhood obesity may increase the risk of pediatric MS in young girls (13). In animal studies, consumption of a high-fat diet exacerbates autoimmune activity in mice with an MS-like disease (14). Sodium intake, in particular, is strongly associated with MS disease activity. In one study, individuals with high sodium intakes had almost 4 times as many exacerbations as individuals with low sodium intakes (exacerbations are episodes of central nervous system inflammation ranging in duration from days to months that cause new symptoms or a worsening of existing symptoms). Individuals with higher sodium intakes were also 3.4 times more likely to exhibit new white matter lesions on brain or spinal cord MRIs, indicating greater disease activity and damage to the central nervous system (15).

In general, metabolic ill health may be linked to disease progression in MS through inflammatory processes (10).
Higher levels of LDL, total cholesterol, and total triglycerides are associated with worsening disability and with greater accumulation of new lesions in MS patients (16, 17). One study found that individuals with MS were more likely to be insulin resistant than matched healthy controls, and that insulin resistance was associated with greater disability and higher levels of inflammatory markers and oxidative stress in individuals with MS (18).

Potential benefits of a plant-based diet

In contrast to Western-style diets, plant-based diets tend to have a favorable effect on metabolic health. Vegetarian diets are associated with lower BMIs, lower blood pressure, and lower rates of diabetes and metabolic syndrome (19). The efficacy of plant-based diets for weight management is well documented (20,21). Vegetarian diets can also be an effective treatment for dyslipidemia, capable of lowering both LDL and total cholesterol (22). Vegetarian diets, especially vegan diets, tend to be lower in total calories and salt than omnivorous diets, and have a more favorable fatty acid profile (23). Given the considerable interrelationship between metabolic dysfunction and MS disease activity, it seems reasonable to conclude that a plant-based diet may confer some degree of protective effect.

Furthermore, oxidative stress plays a role in the central nervous system damage that occurs in MS (24, 25). Some studies have found that individuals with MS have lower serum levels of antioxidants than healthy individuals, particularly during an exacerbation (26, 27). Plant-based diets tend to be rich in dietary antioxidants (28) that mitigate oxidative damage.

Plant-based diets are likely to be low in saturated fat and cholesterol and rich in polyunsaturated fatty acids and phytosterols (although diets that exclude fish may be low in the omega-3 fatty acids EPA and DHA, which is discussed further below). Polyunsaturated fatty acids are thought to be potentially protective against MS disease progression because of their anti-inflammatory functions (29). However, clinical trials to date involving omega-3 and omega-6 fatty acids have yielded disappointing results (29, 30). Phytosterols have shown promise for mitigating inflammation in cell studies and animal models of MS (31,32), but human trials are still needed. Further research is needed to confirm the purported protective effects of polyunsaturated fatty acids and phytosterols against MS.

Plant-based diets may counter MS-related inflammation via epigenetic mechanisms, alterations to the gut microbiome, or both. Abnormal patterns of DNA methylation and histone modification increase expression of pro-inflammatory genes in MS (33,34). Studies suggest a role for both folate (35) and betaine (36), two nutrients abundant in plant foods, in ameliorating these epigenetic aspects of the MS disease process through their role in methionine metabolism. Fiber-rich plant-based diets also have a favorable impact on gut microbial composition (37), which may reduce inflammation through increased bacterial production of anti-inflammatory metabolites such as short-chain fatty acids (38).

Potential challenges

Vitamin D, vitamin B12, and the omega-3 fatty acids EPA and DHA are nutrients that have been proposed to play a role in MS (39), and these may be in short supply in a plant-based diet, particularly one that excludes animal products entirely. Whether MS has any relationship with vitamin B12 and EPA/DHA remains unclear, whereas the link between MS and vitamin D is increasingly well established.

Early epidemiological studies found fish consumption to be protective against MS (5,39), a relationship that could be explained either by the presence of EPA and DHA or vitamin D in fatty fish (or both). As mentioned previously, studies of omega-3 supplementation, including EPA and DHA supplementation, have failed to show the expected benefits in subjects with MS (30), and the Nurses’ Health Studies failed to show a significant association between fish intake and MS risk (9). Thus, little can be concluded regarding the risks of low intakes of EPA and DHA with respect to MS.

The evidence for a relationship between MS and vitamin B12 is limited. Some studies suggest that MS may be associated with low levels of vitamin B12 and high levels of homocysteine (40), but the few trials involving vitamin B12 supplementation for MS patients have not yielded promising results (39).

Vitamin D has received a great deal of attention as a nutrient of critical importance in MS. Vitamin D deficiency is thought to contribute both to the onset of MS and to disease progression (39,41).

Vitamin D is of particular relevance for a discussion of MS and plant-based diets in light of conflicting evidence regarding the vitamin D status of vegetarians. In Adventist Health Study participants, researchers detected no significant difference in the vitamin D status of vegetarians, semi-vegetarians, and omnivores (42). However, researchers examining data from the EPIC-Oxford study found the opposite: vitamin D status was determined by the degree of animal product exclusion from the diet, with meat-eaters having the highest serum vitamin D levels and vegans having the lowest, with fish-eaters and vegetarians intermediate between the two (43).
Could low vitamin D intakes among vegetarians and vegans increase MS risk or disease progression? In order to determine whether this concern is truly warranted, further study of vitamin D and MS, as well as the vitamin D status of vegetarians, is needed. In the meantime, there is no harm in continuing to encourage all individuals eating plant-based diets to obtain adequate intakes of vitamin D, vitamin B12, EPA, and DHA from fortified foods or supplements (44).

Final thoughts

MS is a progressively disabling disease, and eventually symptoms such as fatigue, weakness, and cognitive problems may interfere with an individual's ability to procure, prepare, and consume food, possibly resulting in malnutrition (45). In light of these challenges, it is of the utmost importance that individuals with MS receive sound, evidence-based, practical advice regarding nutrition. Some aspects of a plant-based diet may potentially be beneficial for an individual with MS, but the evidence currently available falls far short of substantiating the claims of a miraculous cure. More research is needed on the nutritional factors that influence MS and other autoimmune diseases, and on the role that plant-based diets may play in prevention and treatment.

References available at end of newsletter.

Elizabeth C. Hubbard is a dietetic intern and graduate student in nutritional sciences at Oklahoma State University. She obtained her BS in Nutrition from the University of Maryland, where she graduated summa cum laude. She also has a BA in Gender and Sexuality Studies from New York University. As an aspiring dietitian and nutrition researcher, her professional interests include plant-based diets; obesity and diabetes prevention and treatment; and healthy, sustainable community food environments. Prior to embarking on her career in nutrition, she taught seventh grade for two years and yoga for five years, and she continues to enjoy educating people of all ages about health, wellness, and sustainability. She also enjoys bike commuting, running marathons, and eating peanut butter. She currently lives in Stillwater, Oklahoma, with her husband and one thousand red wiggler worms who compost her trash.

What’s New in Research?

Compiled by Virginia Messina, MPH, RD


To look at the link between meat consumption and several types of cancer, The Netherlands Cohort Study—Meat Investigation Cohort (NLCS-MIC) categorized subjects into five dietary categories: confirmed vegetarians (n = 691), pescetarians (n = 389), and those who consumed meat one day per week (n = 1,388), two to five days per week (n = 2,965) and six to seven days per week (n = 5,649). The vegetarian group included both vegans and lacto-ovo vegetarians.

After 20.3 years of follow-up, there were 279 lung, 312 postmenopausal breast and 399 prostate cancer cases. Vegetarians and pescetarians were less than half as likely to develop lung cancer compared with subjects who consumed meat on a daily basis but the effect disappeared after controlling for confounders, especially smoking.

Contrary to the investigators’ hypothesis, individuals consuming meat one day per week were at a 75% increased risk of advanced prostate cancer compared with those who consumed meat six to seven days per week (95% CI 1.03–2.97) after adjusting for confounding variables. They suggested that the findings may have been due to chance since they are not supported by other research.

There were no significant associations observed for postmenopausal breast cancer.


The Atwater factor system for determining energy values of foods was developed at the end of the 19th century and is based on the heats of combustion of protein, fat and carbohydrate, which are corrected for losses in digestion, absorption and urinary excretion of urea. It uses a single factor for each of the energy-yielding macronutrients (4 calories each per gram of protein and carbohydrate and 9 calories per gram of fat). Research has found, however, that the available energy from foods can be less than what is predicted by the Atwater calculations.

In particular, previous studies have shown that the metabolizable energy (ME) content (which is the energy available to the body) of pistachios and almonds is less than predicted by the Atwater factors. This study looked at the ME of walnuts when they are consumed as part of a typical American diet.

Eighteen healthy adult subjects participated in the randomized crossover study which had two treatment periods of three weeks each. The same base diet was consumed during each treatment period; the base diet was supplemented with 42 grams of walnuts (1½ servings) per day during one feeding period. Base diet foods were reduced in equal proportions during the walnut period to achieve isocaloric food intake during the two periods. The base diet provided 17% of energy from protein, 29% of energy from fat, and 54% of energy from carbohydrate.
Energy content of the diets, walnuts, and fecal and urine samples were measured via bomb calorimetry, and the data were used to calculate the ME of the walnuts. Based on the findings, the ME of a one-ounce serving of walnuts was 146 kcal, which is 39 kcal less than the calculated Atwater value of 185 kcal/serving. Thus, the ME of the walnuts was 21% less than that predicted by the Atwater factors ($P < 0.0001$). This may explain why nuts in particular, although they are high in fat, have been inversely associated with weight gain.

The reasons for the difference between calculated energy of walnuts and other nuts and the actual ME of these foods isn't completely understood but may be related to findings that cell walls in nuts reduce digestibility.

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The aim of this study was to investigate differences in dietary intakes among subjects enrolled in the European Prospective Investigation into Cancer and Nutrition-Oxford study (EPIC-Oxford). The study included 18,244 meat eaters, 4,531 fish eaters, 6,673 vegetarians, and 803 vegans aged 30 to 90 years. All completed food frequency questionnaires. Estimates of nutrient intakes included fortified foods but not supplements. Meat eaters had the highest energy intakes, followed by fish eaters and vegetarians, whereas vegans had the lowest intakes. Vegans had the highest intakes of polyunsaturated fatty acids, dietary fiber, vitamins C and E, folate, magnesium, iron, and copper. Fish eaters had the highest intakes of calcium and selenium.

Meat eaters had the highest intake of saturated fatty acids, protein, vitamin B2, vitamin B12, vitamin D, zinc, and iodine. Saturated fat intake among meat-eaters was slightly above the population dietary goal of less than 10% of energy from SFA, but exceeded it only by 0.4% of energy. Prevalence of inadequate intake of vitamin B12 was over 80% for vegans and prevalence of inadequate intake of iodine was over 90% in this group. Because the food frequency questionnaire did not record consumption of sea vegetables or iodized salt it is possible that iodine intake was underestimated. Tables used to calculate nutrient intakes also did not include fortified plant milks which means that vitamin B12 intake may also have been underestimated. However, vitamin B12 supplementation has been found to be low among this group of vegans.

There were no statistically significant differences in sodium and potassium intakes between dietary groups. With the exception of sodium intake, compliance with population dietary goals was high across diet groups.

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**Comparison of polyphenol intakes according to distinct dietary patterns and food sources in the Adventist Health Study-2 cohort.** Burkholder-Cooley N, Rajaram S, Haddad E, Fraser GE, Jaceldo-Siegl K. Br J Nutr 2016, Epub ahead of print.

Polyphenols are a large group of phytochemicals found in fruits and vegetables, coffee, grains, soyfoods, tea, red wine and cocoa. These compounds can be classified into five major classes, including flavonoids, phenolic acids, lignans, stilbenes and other polyphenols (e.g., alkylphenols, curcuminoids, tyrosols). It is likely that these compounds play a role in the lower chronic disease seen in those who consume a plant-based diet.

Certain foods are concentrated sources of a particular class of polyphenols. For example, fruits and vegetables are good sources of flavonoids, whereas coffee and whole grains contain particularly high concentrations of phenolic acids.

The primary aim of this study was to compare polyphenol intakes of several vegetarian and non-vegetarian dietary patterns and to assess phenolic intake by food source among 77,441 subjects enrolled in the Adventist Health Study-2 (AHS-2). Dietary patterns were defined as vegan, lacto-ovo-vegetarian, pesco-vegetarian, semi-vegetarian and non-vegetarian.

The main foods contributing to polyphenol intakes were coffee, fruits and fruit juices. Total polyphenol intake differed significantly among dietary groups with the greatest variation seen in phenolic acids from coffee since coffee consumption differed significantly among the groups.

Flavonoid intake was the highest among non-vegetarians, followed by vegans. Although vegans consumed greater amounts of fruits and vegetables compared with other dietary patterns, pesco-vegetarians' intake of fruits and vegetables was the second highest and their intake of fruit juices was higher than that of all other dietary patterns. Intake of legumes and soy foods was also highest among vegans and pesco-vegetarians compared with other dietary patterns.

Coffee consumption and phenolic acid intake were highest among non-vegetarians. In addition, coffee consumers appeared to have a different dietary profile than non-coffee consumers so that fruits, vegetables and legumes contributed less to total phenolic intake of subjects who drank coffee. The fact that coffee drinkers were more likely to be non-vegetarians suggests that coffee consumption may accompany reduced compliance with traditional Adventist dietary practices. However, overall, a relatively small percentage of the AHS-2 cohort drinks coffee, which may explain why mean polyphenol intake for this population is lower than expected, considering that half of the participants consumed a plant-based diet.
Have You Read?

Compiled by Virginia Messina, MPH, RD

Cancer


Cognitive Function


Cooking and Nutrient Retention


Cooking techniques improve the levels of bioactive compounds and antioxidant activity in kale and red cabbage. Murador DC, Mercadante AZ, de Rosso VV. Food Chem 2016;196:1101-7.

Coronary Artery Disease


Dairy Foods and Health


Dietary Behavior


Folic Acid
What is the safe upper intake level of folic acid for the nervous system? Implications for folic acid fortification policies. Reynolds EH. Eur J Clin Nutr 2016;70:537-40.

Hypertension

Obesity
Origins of the obesity pandemic can be analysed. Frank J. Nature 2016;532:149.

Soyfoods

Vegan and Vegetarian Diets


Vitamin B12

Vitamin D

Weight Management
Meet Our Members

Lee Crosby, BA, future RD/RDN

Freelance Blogger, www.veggie-quest.com

By Amanda L. Denton, RD, LD, MS, CHES

How did you first become interested in plant-based nutrition?

I used to think vegan diets were not only “out there,” but possibly dangerous. However, after a frightening breast biopsy at the age of 30 (results were benign, thankfully), I resolved to do everything I could to prevent breast cancer down the road. After extensive research, I found all signs pointed to a diet based on whole plant foods as potentially helpful for cancer prevention. I eased first into being pesco-vegetarian and became increasingly plant-based over the course of a year.

Then I fell off the wagon. I stopped exercising due to a foot injury and, in an attempt to remedy some long-standing gastrointestinal issues, went from being nearly vegan to starting an elimination diet that was high in animal products, sugar, and fat. When I returned to my breast surgeon for my quarterly checkup after 4 months on this diet, she informed me that a lump she’d been keeping an eye on—which had been totally stable on my vegetarian diet—had doubled in size in those same 4 months. Within a week I was under the knife, having the lump removed and biopsied. Results were benign, but this time the cells looked more ominous.

This was another wake-up call. I started swimming and got right back to a whole-food, plant-based diet! For the most part, I’ve happily eaten that way ever since. It’s been over 4 years since my surgery, and so far everything looks great. Best of all, my personal experience with the power of plant-based eating gave me the jump-start I needed to return to school to complete my didactic program in dietetics (DPD).

How do you plan to incorporate plant-based nutrition into your future work as a Registered Dietitian?

I hope to help clients lose weight and prevent, manage, or even reverse chronic disease through outpatient counseling with a plant-based emphasis. I’d love to have my own practice or be part of a group practice with like-minded dietitians. I’m also interested in corporate wellness and nutrition education, where I could incorporate plant-centered eating into nutrition curricula. I’m committed to making plant-based diets mainstream; I plan to write for consumer publications and continue sharing recipes and tips as a food blogger.

Please explain your training background, and the nutrition-related jobs you’ve held including your current job.

I received my bachelor’s degree in biology from the University of Virginia and completed graduate coursework in nutrition at the University of North Carolina-Chapel Hill’s School of Public Health. While in North Carolina, I assisted with a nutrition program evaluation, and two weight loss communications studies. After moving to Maryland for my husband’s job in 2009, I worked as a freelance writer and editor, and completed a certificate in plant-based nutrition. In 2013, I went back to school to finish my DPD at the University of Maryland-College Park. I also interned full-time for 7 weeks with the Physicians Committee for Responsible Medicine, where I learned an enormous amount about plant-based nutrition and how to communicate its benefits. I’m currently blogging at Veggie Quest, and in August, I’ll start my dietetic internship with Virginia Tech in Northern Virginia.

How did you start www.veggie-quest.com? What have you learned in the process of running a blog?

I started Veggie Quest, a blog that makes lower-fat, plant-based eating easy, as a “motivational hobby” shortly after my first breast health scare. The blog’s initial mission was simply to help people—myself included—to eat more vegetables. I launched using a free template in 2010, and my site looked commensurately awful. I eventually switched to WordPress and had a designer customize a theme, which kept costs down while creating a unique look. I also expanded the blog’s focus from vegetables to plant-based eating. Paradoxically, by narrowing my target audience, my readership grew, because I could provide relevant content to people most interested in it.
Since starting Veggie Quest, I’ve learned there’s far more to food blogging than writing, from recipe development, food styling, and photography to social media management, monetization, and more. The two most important lessons I’ve learned, though, are to know my readers and solve their problems. I’ve also discovered that you can’t just put great content on the internet and expect people to find it. You must bring it to readers where they spend time online, whether through social media, recipe sharing sites, or guest posting.

**How do you enjoy spending your free time?**

I’m forever testing recipes for Veggie Quest, and I love to garden! I also walk in the mornings, coffee in hand, either talking on the phone or listening to podcasts. My favorites include Radiolab, The TED Radio Hour, and Serial.

Moreover, I read widely, from nutrition research and food blogs to novels and nonfiction. I also like to relax with documentaries and funny shows like Brooklyn 99 and Modern Family. Finally, I’m learning the Getting Things Done® productivity system, so I can work efficiently during my internship.

**What is one of your favorite vegan/vegetarian meals?**

My favorite everyday vegan meal is a giant spring mix salad with Oil-Free Tahini Dressing from Veggie Quest; no-cheese pizza with olives, roasted red peppers, and fresh basil; and Quick-and-Easy Creamed Spinach from Veggie Quest on the side. For dessert, a slice of Dr. Joel Fuhrman’s Never-Get-Sick Chocolate Cake slathered with my Healthy Chocolate Frosting is pure heaven. For a special night out, nothing compares to the raw vegan tasting menu served weekly at Elizabeth’s Gone Raw in Washington, DC.

**Do you aim to follow any particular type of diet (vegetarian, vegan, raw, etc.)?**

I generally follow an oil-free, whole-food, plant-based diet—although I’m far from perfect!

**What advice would you give to students or dietitians who would like to work in the area of vegetarian nutrition?**

While I’m not yet an RD, I’ve found that building a network of plant-based nutrition students and dietitians has been immensely helpful. My vegetarian friends and colleagues have been a lifeline, helping me navigate nutrition training as a plant-based RD-to-be in an omnivorous world.

**Policy and Advocacy Leader Update**

I am honored to be following in the footsteps of Mark Rifkin as VN DPG’s Policy and Advocacy Leader. I firmly believe that if food, nutrition, and dietetics are part of your profession, then policy should be your passion. Policy is a critical part of each RD/RDN’s practice. Whether at the state level with specific legislation or at the federal level, each of us should stay informed and participate. Most of us don’t have the time to visit members of Congress or our local legislatures, but we do have time to do a few clicks on our computers. The Academy has really made it quite easy for us to do. Just go to www.eatrightpro.org, log in, go to Advocacy and hit Take Action. You will be able to take action on current issues in a matter of seconds. As of this writing (early June) the current action alerts include:

- **Prevent Child Hunger: Oppose Provisions in H.R. 5003**
- **Michigan Academy Members Action Alert: Oppose H.B. 4531 to save Michigan Jobs and Improve Health**
- **Suspend the Harmful Medicare Competitive Bidding Program Today!**
- **Support Improving Child Nutrition Integrity and Access Act of 2016**

Even if these don’t affect you directly, they do affect the profession and that affects all of us. I urge you to respond when you get an “Action Alert” from us. Laws get passed when voices are heard. Your involvement in public policy and advocacy is a critical part of advancing our profession into the future. Act now!!

Catherineconway@msn.com
The 95th meeting of the House of Delegates (HOD) took place virtually on April 30 and May 1, 2016. The topics for discussion were Envisioning Our Second Century (day 1) and Technological Innovations that Impact Food and Nutrition (day 2).

On Day 1, delegates discussed how we can transform our practice to revolutionize nutrition and dietetics for our Second Century. Delegates dialogued about the critical historical events that have impacted the profession; envisioned the profession in the next 100 years; and considered actions that can be taken to engage members in the Second Century. Day 2 focused on technological innovations that impact food and nutrition. Delegates discussed how we can transform all areas of dietetics practice and move the profession forward in a world where rapid advances in technology continually change the way we learn, work and live. Delegates used the Council on Future Practice’s technology change driver as the basis for this dialogue. At their virtual tables, delegates considered two of the four trends within the change driver and proposed strategies to help members shift to higher skills and services that cannot be automated or programmed into technological systems. Delegates generated ideas of technological innovations that RDNs and NDTRs can spearhead, and discussed ways to empower members to transform practice through technology.

In addition, Academy members who are using technology to advance and innovate their practice were highlighted ahead of the meeting. The members’ recorded videos can be found at: www.eatrightpro.org/resources/leadership/house-of-delegates/about-hod-meetings >Spring 2016 Meeting Materials.

As a result of the dialogue, one motion was discussed and passed by the HOD. The following activities have been requested:

HOD Motion #1:

A. The Nutrition Informatics Committee review the input from the Spring 2016 HOD Meeting dialogue, create an action plan and recommendations to address the dialogue objectives, and communicate the plan to the HOD by the Fall 2016 HOD Meeting.

B. All Academy organizational units identify and promote best practices related to technology and integrate technological innovations that impact food and nutrition into their program of work.

C. The Academy create a hub on the Academy website where technology resources related to food and nutrition are shared.

D. The Academy consider highlighting technology in an annual awareness campaign.

E. The Academy’s Second Century Team review the input from the House of Delegates 2016 dialogue and support incorporation of technological advancements into the opportunity areas for the September 2016 Summit and forthcoming innovations projects.

Academy Updates

Many Academy updates were provided electronically to the HOD in advance of the spring meeting. In recorded presentations, Evelyn Crayton, EdD, RDN, LDN, FAND (Academy President), Kay Wolf, PhD, RDN, LD, FAND (Academy Treasurer), and Jean Ragalie-Carr, RDN, LDN (Academy Foundation Chair) provided updates on their respective areas. The recorded presentations as well as all materials related to the Spring 2016 House of Delegates Meeting and updates on all previous motions can be found at www.eatrightpro.org/resources/leadership/house-of-delegates/about-hod-meetings >Spring 2016 Meeting Materials.

It has been a pleasure and an honor to serve as VN DPG delegate to the HOD for the past three years. I pass the torch on to our new delegate, Linda Arpino, RDN, CDN, FAND who will do a wonderful job continuing to represent VN DPG. She can be contacted at la@lifefocusnutrition.com. I look forward to my new role as Policy and Advocacy Leader (PAL) representing VN DPG.
Dr. Greger is like no other. Committed to scouring the scientific literature to determine the most effective methods for improving length, and more importantly, quality of life, he shares this vital information with readers and viewers. As the founder of the nonprofit, commercial-free site www.NutritionFacts.org, he posts three brief videos (2,000 and counting) and two blog posts each week. His team reviews tens of thousands of nutrition- and health-related articles each year, as he famously says, “so you don’t have to!” This book “is a long-awaited opportunity to share practical advice about how to put this life-changing, life-saving science into practice in our daily lives.” Although his life was first touched by the power of plant-based whole foods as a child, when his 65-year-old grandmother recovered from terminal heart disease as a result of attending one of Pritikin’s early programs, he was an omnivore until becoming familiar with Dr. Dean Ornish’s research; “And there it was, published in the most prestigious medical journal in the world – proof that my family’s story was not a fluke: Heart disease could be reversed.”

How Not to Die is divided into two parts. Part one addresses the “why,” delving into the science of a plant-based, whole food eating pattern, with specific phytonutrient-rich foods to help prevent, treat and even reverse the fifteen leading causes of death. The book is thoroughly referenced, with over 100 pages of citations. Readers will become familiar with critical components of the development and progression of common chronic diseases, and the potential impact of specific foods/nutrients. Chapters address “How not to die” from Heart Disease, Lung Disease, Brain Diseases, Digestive Cancers, Infections, Diabetes, High Blood Pressure, Liver Disease, Blood Cancers, Kidney Disease, Breast Cancer, Suicidal Depression, Prostate Cancer, Parkinson’s Disease and iatrogenic Causes. He states that he doesn’t advocate for a vegetarian or vegan diet, he advocates for an evidence-based diet, and “the best available balance of science suggests that the more whole plant foods we eat, the better - both to reap their nutritional benefits and to displace less healthful options.”

In part two, he identifies what he eats every day. A traffic light system is described to help identify the healthiest options, followed by Dr. Greger’s Daily Dozen. “Which foods tend to have the most of the good stuff and the least of the bad?” Green light foods to enjoy (unprocessed plant foods rich in protective nutrients and low in/free of disease promoting factors); yellow light foods to minimize (processed plant foods, unprocessed animal foods); and red light foods to avoid (ultra-processed plant foods and processed animal products). With this understanding, you’ll be ready to jump into a chapter devoted to each of his Daily Dozen (essential food categories to incorporate for optimal health, plus exercise), including: beans, berries, cruciferous vegetables, greens, flaxseeds and more.

Each chapter in this section begins with Dr. Greger’s favorite foods in the specific category, serving sizes and daily recommendations, followed by many practical suggestions for how to enjoy these foods in meals, snacks and even desserts (rather than “formal” recipes). Tidbits of interesting information and answers to common questions are thoughtfully integrated into each chapter, including GMO soy, canned beans vs. home-cooked, soy vs. sodium in miso soup, and beans and gas.
While the size of the book may be daunting for some, it is incredibly interesting, with chapters short enough to keep readers engaged but detailed enough to explain disease processes and research findings about the health impact of our food choices, and specific actions to take. This invaluable resource, with a practical approach to optimizing our health using our forks, is a must-read for everyone, not just those working in healthcare.

The audio book version, narrated by Dr. Greger, is a joy to listen to, as his passion and commitment for empowering people to take responsibility for their health, and great sense of humor, come through loud and clear!

References

**Probiotics and Plant-Based Gut Health, Stephanie McKercher, MS RDN**


**Vegetarian Diets in Pregnancy and Lactation, Melinda Boyd, MPH, MHR, RDN**

Plant-Based Diets and Multiple Sclerosis, Elizabeth Hubbard, BA, BS


