Health Benefits of Cranberries - It’s not just about UTIs anymore!

Amy B. Howell, M.S., Ph.D.

History of Use
Cranberries have demonstrated a broad array of health benefits in a number of research studies. They are native to North America and have a long history of use over hundreds of years for their many health benefits. The fruits were widely used by Native Americans and Colonial settlers as food, medicine, and for trading. They were used for their antibacterial properties, treating blood poisoning, in poultices for wounds, diarrhea, and urinary disorders. Since citrus fruits were not grown in New England, American sailors used cranberries to prevent scurvy on the long ocean voyages to Europe. The current research on cranberries confirms the validity of many of these early uses of the fruits to promote health. Research reveals that cranberries appear to have multiple health benefits effective against an array of afflictions and diseases as reviewed in this article.

Bacterial Adhesion
Cranberries are rich in a number of phytochemicals, including anthocyanin pigments (give cranberries their red color and protect the fruit from ultraviolet light), flavonols (serve as insect attractants), and an abundant supply of polyphenolic proanthocyanidins (PACs), or condensed tannins. PACs are produced by the plant in times of stress and they have an astringent quality that deters predator feeding on the young fruit. The PACs found in cranberry are different from those found in other PAC-rich foods, like chocolate and grape that contain single B-type linkages between flavan-3-ol units. Cranberry PACs have unusual double A-type linkages that are associated with preventing bacterial adhesion in several sites in the body, including the urinary tract, stomach and oral cavity. Bacterial adhesion is the initial step in the infection process and is required to initiate bacterial growth. Thus, inhibiting this adhesion step prevents subsequent colonization and infection. Since cranberry does not kill bacteria as an antibiotic would, there is no pressure for selection of antibiotic resistant strains of bacteria. Therefore, cranberry will not lose its effectiveness over time. It is the powerful bacterial anti-adhesion properties of cranberry PACs that are associated with maintenance of urinary tract health and show promise for prevention of oral biofilms and ulcers. This mechanism of action is very unusual, making cranberry stand out as a unique functional food.

Urinary Tract
Much of the research in the past century has focused on the role of cranberry in the maintenance of urinary tract health. There is mounting scientific evidence to suggest that cranberries help prevent UTIs, however there is no evidence that they can treat UTI once an infection is present. A 1994 clinical study at Harvard University found that drinking 300 mL of a commercially available cranberry beverage containing 27% cranberry juice on a daily basis reduced urinary tract bacteria in elderly women by nearly 50%. The Cochrane Database Systematic Review publishes frequent updates on the growing number of clinical studies on cranberry and UTI prevention and has identified four good-
quality human intervention trials that support this benefit. For years, it was falsely assumed that the mechanism of action was the acidity of the cranberry juice preventing bacteria from growing in the urine. In actuality, research suggests it is the A-type cranberry PACs that prevent P-fimbriated Escherichia coli (E. coli) from attaching to uroepithelial cells. PACs with B-type linkages from grape, chocolate, tea and apple do not prevent bacterial adhesion in the urine following consumption. Research is currently underway to identify metabolites in the urine following consumption of cranberry products. If a unique metabolite is discovered, it could serve as a compliance marker for clinical trials, ensuring that participants have actually consumed the cranberry product being tested, and could help in the design and implementation of dose-response studies.

**Stomach**

Researchers have found that the bacterial anti-adhesion mechanism of cranberry PACs may extend beyond UTIs and have benefit for reducing stomach ulcers. Extracts of cranberry containing PACs prevented Helicobacter pylori (H. pylori), the bacteria that causes stomach ulcers, from attaching to isolated stomach cells. In asymptomatic persons, H. pylori infection can lead to the progression of gastric ulcer. Thus, preventing adhesion of H. pylori could prevent subsequent infection and progression to ulcer. In a randomized placebo-controlled clinical study in China, consumption of 27% cranberry juice drink alone (500 mL/day) accounted for a 15% eradication of H. pylori, compared to 5% for placebo. Children in a clinical trial in Chile were administered 200 ml/day of cranberry juice drink for 3 weeks, resulting in a 17% reduction in H. pylori infections. In a clinical study with patients receiving triple antibiotic therapy for H. pylori infection, addition of cranberry juice drink (250 mL/day) to the treatment developed for consumer use to maintain oral cavity health, as cranberry contains acids which could potentially harm teeth. Products such as gums, mouthwashes or lozenges would be appropriate, as they could be designed to promote sufficient contact time between the active PACs and the oral bacteria.

### Effective Daily Consumption Levels

<table>
<thead>
<tr>
<th>Product</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cranberry juice cocktail drinks</td>
<td>240-300 ml</td>
</tr>
<tr>
<td>Dried cranberries</td>
<td>40 g</td>
</tr>
<tr>
<td>Cranberry sauces</td>
<td>100 g</td>
</tr>
<tr>
<td>Cranberry powders</td>
<td>250-1000 mg</td>
</tr>
</tbody>
</table>

**Cardiovascular**

Cardiovascular disease (CVD) is influenced by a number of processes, including oxidative stress and inflammation. Cranberries are very high in both antioxidants and anti-inflammatory compounds including PACs, anthocyanins and flavonol glycosides, with levels of each depending on the cultivar. Oxidation of low density lipoprotein (LDL) cholesterol is implicated in the development of CVD. Cranberry consumption may be beneficial in preventing CVD by inhibition of LDL cholesterol oxidation, the induction of LDL receptor expression, and through increasing cholesterol uptake. A review of several clinical trials indicates that cranberry consumption increases total plasma antioxidant status. In a clinical study, high density lipoprotein (HDL) cholesterol levels were increased by over 8% in overweight men following daily consumption of 250 mL/day of 27% low-calorie cranberry juice drink for a period of 12 weeks. These results are promising, in that high HDL is associated with CVD risk reduction.

**Anti-cancer**

Studies reveal that compounds in cranberries have significant potential to influence a number of factors in the carcinogenesis process, including inhibition of oxidation, induction of apoptosis, antiproliferation, and reduction of invasion and metastasis. These compounds include flavonols (mainly quercetin), PACs, anthocyanins, and ursolic acid. The majority of studies on the chemopreventive properties of cranberry have been done in vitro with cancer cell lines (cancer cells grown in tissue culture representing generations of a primary cell culture), as it is difficult to do human trials. Cranberry juice has been shown to inhibit breast tumor growth, and an extract of cranberry inhibited growth of MCF-7 and MDA-MB-435 breast cancer cells. Cranberry PACs inhibited acid-induced cell proliferation in human esophageal adenocarcinoma cells. Other research has shown that compounds in...
cranberries, especially PACs, act to induce enzymes that protect against cancer and reduce rapid tumor growth. The high levels of antioxidants in cranberries may contribute to their anti-carcinogenic properties, as reactive oxygen species have negative effects on a number of physiological processes in the body and are known to increase cancer risk.

Take Home Message
The extensive portfolio of research on the health benefits of cranberry consumption has propelled it into the “superfruit” category. Consumers are very interested in managing their own health, especially through increased consumption of fruits and vegetables. Cranberry fruit is normally processed into products such as juice, sauces, or sweetened dried cranberries. Single servings of all forms of cranberry have some effectiveness against a range of afflictions. However, the efficacy of some products, such as encapsulated powders, can be affected by high temperatures during the extraction process. Look for powders that are derived from whole cranberries and have been clinically tested and carry the United States Pharmacopeia (USP) or Good Manufacturing Processes (GMP) designation. The doses for powder are more arbitrary and can range from 1-4 capsules per day. For the health benefits listed above, it is best to look for cranberry juices with at least 25% cranberry juice. Cranberry mixed with other juices is fine as long as the cranberry content is high enough. Clinical research has shown that both the sugar-sweetened and low calorie cranberry juice drinks or “cocktails” are effective at doses of 240-300 mL per day. Juices that are 100% cranberry are very tart and difficult to ingest; therefore, adding 60 mL to other juices or water increases palatability. There is no need to consume more than one or two eight ounce or 240 mL glasses of cranberry juice per day for the benefits, so it is easy for consumers to maintain a daily cranberry regimen!

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References
Telomere Length As a “Biological Age” Indicator - To Measure or Not to Measure

Amber Parisie, B.S.

While telomeres have been studied by scientists for several decades, they have recently received considerable attention due to their ability to act like cellular “timeclocks.” In 2009, Elizabeth H. Blackburn, Carol W. Greider, and Jack W. Szostak, won the Nobel Prize in Physiology or Medicine for their work that sheds light on many of the processes involved in what has been referred to as a person’s “biological” or “cellular” age. Studies have shown that a person’s telomere length (TL) is related to risk of diseases associated with aging, psychological well being, and nutrition and exercise status. Companies such as Telome Health, co-founded by Blackburn, offer a blood test to evaluate TL, while companies such as T.A. Sciences and Isagenix are marketing products they claim can lengthen telomeres. Although numerous studies have related physical and mental health and well being to these microscopic protectors of DNA, the launching of companies that test TL raises questions about the importance of this information outside of the research arena. Regardless of whether or not a client has had a TL assessment, results of these studies can be of great help to integrative medicine practitioners.

Telomeres are strings of nucleotides found at the ends of chromosomes. They act like protective caps that prevent the chromosome from fraying or fusing with other chromosomes. They are somewhat like a DNA stutter, with the base human telomere sequence (TTAGGG) repeating a thousand times or more. Each time the cell replicates the telomeres become shorter. Telomere length is highly variable at birth, and throughout life can be influenced by a number of environmental and genetic factors. In highly proliferating cells, such as stem cells and germ cells, an enzyme called telomerase helps to maintain TL. In somatic cells (all cells of the body except sperm, egg, and undifferentiated stem cells), telomerase activity is low, which leads to the progressive shortening of telomeres with age. Research shows telomerase activity is active in cancer cells, which can be a problem for cells in a malignant state. Once telomeres become too short to support normal division of chromosomes, they enter an arrested state of senescence or aging. For this reason, TL in somatic cells is thought to be a marker of cellular age, and can be accelerated or decelerated depending on an individual’s genetic and environmental factors.

Numerous studies have shown correlations with TL and an individual’s risk for disease, associated metabolic states, and diet. Many of these diseases and metabolic states are more commonly seen with aging, such as cardiovascular disease, insulin resistance, cancer, oxidative stress, and inflammation. For example:

- In a study on hypertensive and normotensive men, insulin resistance, oxidative stress, and age were inversely correlated with TL length. When compared with normotensive peers, hypertensive participants showed shorter age adjusted TL. In addition, in hypertensive participants, shorter TL was largely explained by insulin resistance.

- In pre-menopausal women, or women with lower supplemental or dietary intake of beta-carotene and vitamins C and E, shorter TL was associated with increased breast cancer risk. First, in younger or pre-menopausal women, the shortest TL was associated with increased breast cancer risk. Second, women with the shortest TL who also had poor antioxidant intake had a moderately increased risk of breast cancer.

- In patients with rheumatoid arthritis (RA), it was shown that TL shortening was independent of markers for disease severity and disease activity, but was influenced by HLA-DRB1 genotype. HLA-DRB1 alleles encoding QKRAA, QRRAA, or RRRAA amino acid sequences in positions 70-74 of the DR-ß chain, a motif commonly known as the rheumatoid arthritis ‘shared epitope’ (SE), are seen in many individuals with RA. This genotype may influence TL shortening by increasing cellular vulnerability to oxidative damage. SE acts as a ligand, triggering nitric oxide signaling that blocks the Camp-mediated anti-oxidative pathway, thus leading to increased oxidative damage. This happened in opposite cells in an allele specific manner. When adjusted for age and sex, SE positive cases had shorter TL than controls having one or more copies of the SE. Results of this study do not support the hypothesis that inflammation is the main factor in shorter TL in rheumatoid arthritis. However, the regression lines against age for controls and cases are parallel, which suggests that the shorter TL in RA cases is present at a young age. These observations suggest that shorter TL early in RA may be a disease predisposing factor rather than a secondary effect of the disease.

- In a study of 63 healthy post-menopausal women, those with the shortest TL had a higher waist circumference, higher total fat intake, and low fiber intake. An inverse relationship between TL and BMI, waist circumference, and the waist to hip ratio was observed, but after adjusting for smoking and age, waist circumference was the only factor that remained significant. When fatty acids were evaluated individually, there was a stronger association with TL than with total fat intake. Intake of n-6 polyunsaturated fatty acids was inversely associated with TL. TL was longer in participants who had...
higher intakes of dietary fiber from cereal and whole grain sources, suggesting that a diet high in plant based foods may have a positive effect on TL due to the increased antioxidant and anti-inflammatory activity of these foods.\textsuperscript{15}

Inflammation, oxidative stress and diet contribute to many disease states and are common factors in several of these studies.\textsuperscript{2,3,9,10,14} One study showed inflammation markers, such as C-reactive protein, interleukin 6, and homocysteine, were positively associated with a diet pattern high in fats, processed meats, fried potatoes, salty snacks, and desserts, and inversely associated with a diet pattern high in whole grains, fruits, nuts, and green leafy vegetables.\textsuperscript{15} Therefore, in this writer’s opinion, increasing consumption of antioxidant-containing whole grains, fruits, nuts, and vegetables and decreasing consumption of fats, processed meats, fried potatoes, salty snacks, and desserts, seems likely to have a lengthening effect on telomeres by lowering inflammation and oxidative stress.

Psychological well being is another area of focus in TL-related research. Whether connected to number of hours worked, perceived stress, meditation practice, or exercise, there appears to be an effect on TL as demonstrated in the following studies.\textsuperscript{5,8,10}

- In a study on 608 women ranging in age from 35-74, shorter TL was associated with perceived and chronic stress, and a full-time or overtime work schedule. Participants who worked part time or were unemployed had longer TL than those employed full time or more. Epinephrine was found to be higher in those with higher perceived stress and the shortest TL.\textsuperscript{5}

- A correlation of shorter TL in adults with the number of reported adverse childhood events, such as chronic or severe illness, was observed in a sample of anxiety disorder patients and matched controls.\textsuperscript{6}

- Compared to controls, participants who attended a three-month concentrative meditation retreat showed an increase in telomerase activity. This increase was associated with increased perceived control and decreased neuroticism.\textsuperscript{7}

- In one study on post-menopausal women, a higher level of perceived stress significantly predicted shorter TL in inactive participants only. Participants who experienced high stress and participated in vigorous exercise did not show decreased TL.\textsuperscript{8}

The effect of perceived stress on TL is a common factor in these studies.\textsuperscript{5,7,8} Participants reporting the highest perceived stress showed the greatest decrease in TL.\textsuperscript{5,8} This can be buffered by vigorous exercise and by concentrative practices, such as mindfulness meditation, which can decrease rumination by increasing focus on the present moment.\textsuperscript{7,8} An overall message taken from the research reviewed above is to manage stress effectively to reduce shortening of TL.

**Take Home Message**

In the not too distant past, TL assessment could only be completed through research participation. As a result of many studies, several companies offering a TL test have opened, as well as companies selling high priced supplements with anti-aging claims. This raises questions regarding the benefit of TL assessment. If it is known that reduced TL can increase risk for disease and that diet and stress-relieving activities can increase TL, thus decreasing risk for disease, is it necessary to have TL assessed? The answer: it depends. It is easy to say “yes” considering the links between TL shortening and hypertension, insulin resistance, RA, and stress. However, it is also easy to say “no” when viewing this research through a wide lens. Overall, a healthful diet, exercise, and stress-relieving activities are beneficial in preventing a wide-array of diseases – not just increasing TL.

Although routine blood work and blood pressure results may be enough to promote behavior changes in some clients, others may be more motivated by knowing their biological age. For clients who need an extra push to make lifestyle changes, TL assessment could be beneficial. Regardless of whether or not a client opts to have TL assessed, integrative medicine practitioners can use the results of these studies as additional proof to promote integrative care. Consuming a diet rich in whole grains, fruits and vegetables, and participating in exercise and some form of meditative practice, can improve overall health by decreasing inflammation and oxidative and psychological stress.

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**References**


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The conference began with Kathy Swift’s overview of the Integrative and Functional Medicine Radial. She described the radial as a dynamic, non-linear template for critical thinking about integrative nutrition practice. At the core of the radial is the person for whom we provide personalized nutrition care. Encircling the radial core are whole foods. Whole foods are central to the radial, as they influence and are influenced by the surrounding concepts:

- **Core Imbalances**: Pathology, microbe & imbalance, nutritional deficit & excess, metabolic dysfunction, cellular toxicity, micronutrient deficiency, chronic stress, emotional/mental trauma, genetic & epigenetic factors.

- **Metabolic Pathways/Networks**: Essential fatty acids, amino acids, nucleic acids, enzymes, hormones, antioxidants, stress hormones, stress response, mitochondrial function, gut microbiome.

- **Biomarkers**: Metabolites, enzymes, hormones, antioxidants, cytokines, microbiome.

- **Systems Signs & Symptoms**: Nutrition, detoxification, endocrine, immune, renal, heart, brain, skin, gut.

- **Personalized Nutrition Care Assessment**: Nutrition, detoxification, endocrine, immune, renal, heart, brain, skin, gut.

- **Nutritional Terrain**

- **Lifestyle**

James Doherty commenced by providing some gems of research demonstrating that whole foods are more than the sum of their nutrient parts. For example, while both isolated vitamin C and orange juice increase plasma levels of vitamin C when consumed, only the orange juice provides a protective effect against hydrogen peroxide-induced DNA damage. One helpful resource to keep in mind is Dr. James A. Duke’s phytochemical and ethnobotanical database.

Doherty then described the fascinating theory of nutrient triage, set forth by Dr. Bruce Ames. Nutrient triage connects many theories of aging into one basic theory. The essence of this theory is that the body triages nutrients and directs them towards immediate needs. The body is designed to, “live for today”; it is not concerned with the long-term effects of oxidative DNA damage or prevention of chronic disease. The body wants to be healthy at the moment! With this perspective in mind, we can begin to think differently about the nutrients provided to our bodies. In order for the body to move past “living for today” and funnel nutrients towards areas that will prevent chronic diseases in aging, we need to consume the full complement of nutrients available only in whole foods.

Diana Noland – Integrative Nutritional Assessment: Chronic Disease, Core Imbalances and the Nutritional Terrain

Next, Diana Noland discussed integrative nutritional assessment. The objectives of her session were:

- Review the two major metabolic parameters

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- Review the two major metabolic parameters
of chronic disease physiology that influence nutrition status.

- Classify the seven core systems related to nutritional injury.
- Apply nutrition data to assess a person’s nutritional terrain.

During her introduction, Noland provided a definition and purpose of integrative and functional medical nutrition therapy (IFMNT): “for prevention and treatment of chronic disease that embraces conventional and complementary nutritional therapies.” She suggested in light of the increasing rates of cancer, autism, obesity, and inflammation-related conditions, we need to start looking earlier to check for subclinical disease.

Common factors in chronic disease include overweight/obesity, body fat percentage, and sarcopenia, or age related loss of body mass and function. Noland then targeted each of the core imbalances on the IFMNT Radial: inflammation and oxidative stress (the main driver of all imbalances), cellular integrity, digestion, detoxification, energy metabolism, neuro/endocrine/immune and nutritional status. “Core imbalances” is an apt name as other peripheral metabolic problems stem from these seven. If we can quickly assess and key into which of these core imbalances are present in our patients, we can truly cut to the heart of illness.

Nutritional terrain includes more than just ingestion of food. We must be aware of all methods that can bring metabolically active substances into the body. This includes not only the mouth and GI tract, but also what is placed on the skin, in our ears, eyes, vagina, rectum and bladder. Noland addressed each of these methods and provided suggestions on how to truly “see into the cells” of our patients. Her final message was a hopeful one: “When we improve the nutritional terrain, we improve chronic disease outcomes.”

Michael Stone – The Integrative Nutrition Focused Physical

Dr. Michael Stone addressed key aspects of the integrative nutrition-focused physical exam. His presentation was so chock-full of information, it could have been the whole day’s conference! Dr. Stone opened with an overview of networks to consider when assessing patients: social, disease, and metabolic. He reminded us that we must also consider genomics and metabolomics; epigenetic influence washes over each individual from conception to death.

Keeping in mind that nutrition status affects biotransformation, Dr. Stone’s presentation was truly holistic; every part of the body can tell us something about nutritional status. The essential components of the nutrition-focused physical exam are anthropometrics, and a complete “head to toe” exam including mouth and tongue, eyes, nose, skin, hair distribution, nails and peripheral sensation. Dr. Stone also demonstrated the simple tools needed to uncover vital findings in patients: functional assessment tests such as bioimpedance analysis, oxygen saturation with peripheral pulse wave form, peak expiratory flow rate, FACT-visual contrast testing, smell testing, capillary fragility tests and functional muscle tests (strength, balance and joint function).

Jamie Wright – Gut Health: Adverse Food Reactions

Dr. Jamie Wright delved into gut health, immune health and allergies. Dr. Wright’s “gut health alphabet” is absorption, bacterial flora, coverage (epithelial integrity), detoxification, and elimination. He stated, “an unhealthy gut is an inflamed gut” and explained how this may lead to further immune system activation and inflammation, allergies, problems with weight management, malnutrition, rheumatologic and autoimmune conditions. He stressed the importance of reducing inflammation and covered assessment tools beyond IgG testing, such as CSDA 2.0 (comprehensive stool analysis) by Genova Diagnostics and ALCAT’s functional test of the immune system.

Dr. Wright also discussed the pathophysiology of a leaky gut. Zonulin is a protein produced in the gut that weakens epithelial tight junctions, leading to leaky gut. This causes activation of the immune system and leads to inflammation. Dr. Wright walked through his strategic plan to begin gut healing, including ways to avoid triggers of zonulin release.

Kathie Madonna Swift – The Path Ahead: Resources for the Nutrition Practitioners Toolkit

In closing, we again heard from Kathie Swift, who left us with some amazing tools to keep on hand. This arsenal of resources she presented includes everything from books, journals and databases, to webinars and smartphone apps.

For more information about this fantastic conference and to order your copy of the full presentations (including audio and speaker notes), please go to the DIFM website, www.integrativerd.org, and click on the Members Services section, then DIFM Store. This activity is approved for 6 hours of CPEU from the Commission on Dietetic Registration (CDR).

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The Institute of Functional Medicine (IFM) sees the value in the Registered Dietitian (RD) as a resource and educator in the arena of functional medicine and is helping to promote such. The Institute for Functional Medicine is a continuing education company with over 40 faculty members educating mostly physicians, but also other healthcare providers. Their mission is to serve the highest expression of individual health through widespread adoption of functional medicine as the standard of care. Functional Medicine is patient-centered health care that addresses the unique interactions among genetic, environmental and lifestyle factors influencing both health and complex, chronic disease. In short, they teach providers to treat the person vs. the disease, search for the cause of disease vs. quell symptoms, and view the body through a systems biology approach (i.e. gastroenterology and neurology are greatly intertwined) vs. system silos (i.e. gastroenterology and neurology are separate systems requiring separate treatments).

A recent IFM offering was entitled ‘Functional Nutrition Course’ and was held in Denver, CO the last of October. The IFM and Dietitians in Inegative and Functional Medicine (DIFM) have entered into a networking relationship that provided DIFM members with a significant discount on this course. Although the primary audience was physicians and chiropractors, RDs, and DIFM members in particular were well represented. The course consisted of almost three days of very intense, in-depth information about the role of functional nutrition in the health and healing of patients, and how to incorporate functional nutrition into a patient’s healthcare plan. Presenters included Kristi Hughes, ND; DIFM’s own Ruth DeBusk, PhD, RD; Elizabeth Boham, MD, MS, RD; Mary Willis, RD, LD, CDE; Deanna Minich, PhD, CN; Michael Stone, MD, MS; and Betty Bishoff, MD, RD.

This conference was followed by two courses in December 2011 on detoxification and advanced G.I. practice that promised to be of equal intensity and value. These will be followed by a course in February on Hormone Balance, and this year’s annual symposium on Cardiology and Metabolic issues, in February and May, respectively.

It is virtually impossible to scratch the surface of the information provided in this course. Below are some highlights that are hopefully tantalizing enough to make DIFM members want to learn more about IFM offerings and their value to a well rounded nutrition practice.

### Integrating Nutrition within the Functional Medicine Course Overview

The participants were introduced to the topics that would be covered during our intensive three day workshop and applicable to our practices in functional nutrition and/or medicine. The participants were introduced to the topics that would be covered during our intensive three day workshop, which are applicable to our practices in functional nutrition and/or medicine. We were encouraged to participate in the head-to-toe nutrition screening exams that demonstrated to attendees the tests and observations that should be conducted with each patient. This provided a hands-on experience of what physical characteristics to analyze, from measuring height, weight, and bioelectrical impedance, to peripheral sensation and smell testing.

The Nutrition Physical Exam provided the framework for the A, B, C, and Ds of nutrition assessment – Anthropometrics, Biomarkers and Functional Labs, Clinical Indicators from the Nutrition Physical Exam, and Diagnoses. We were reminded that nutrition influences us at every stage of life from preconception until old age. Antecedents, triggers, and mediators or perpetrators influence our physiology and functioning throughout life affecting our assimilation of nutrients, communication between our body’s systems, defense and repair, transport of essential nutrients, energy, and biotransformation and elimination.

Clinical imbalances among these systems along with personalized lifestyle factors of sleep, nutrition and hydration, exercise and movement, stress and resilience, and relationships and networks provide the backbone to how effectively our body responds to life.

To treat a patient or client functionally we were introduced to the familiar ADIME process – Assess, Diagnose, Intervene, Monitor, and Evaluate. This is the basis of all that should be considered with the patient from Nutrition Assessment, looking at clinical indicators from the physical exam, through nutrition Diagnosis, nutrition Intervention and nutrition Monitoring and Evaluation.

From there we were instructed to use the Functional Medicine heuristic to tell the patient’s story that will ultimately lead up to the diagnoses and interventions. The Functional Medicine heuristic was used to help participants understand how to prepare themselves for interacting with patients and use the information from ADIME. That heuristic was GO TO IT.

- G – Gather oneself with mindfulness in order to prepare for a partnership with the patient.
Gather information through intake forms, questionnaires, the initial consultation, physical exam, and objective data. A detailed functional medicine history is taken appropriate to age, gender, and nature of presenting problems.

- **O** - Organize the subjective and objective details from the patient’s story within the functional medicine paradigm. Position the patient’s presenting signs and symptoms, along with the details of the case history on the timeline and functional medicine matrix.

- **T** - Tell the story back to the patient in your own words to ensure that you understand what has been told and the accuracy of the information. The re-telling of the story is a dialogue with the patient and helps them know they have been heard. The patient is encouraged to make corrections to the story and to add to it as needed for clarification.

- **O** - Order by prioritizing the patient’s information
  - Acknowledge the patients goals
  - Address modifiable risk factors
  - Use Sidney Baker’s model of too much/not enough; what are the insufficiencies and excesses
  - Identify clinical imbalances or disruptions in the organizing systems of the matrix

- **I** – Initiate further functional assessments and interventions based on what has been discovered from the above information
  - Perform further assessments
  - Refer to adjunctive care
    - Nutrition Professional
    - Lifestyle Counselor
    - Healthcare Provider
    - Specialist
  - Initiate therapy
  - T – Track assessments noting the effectiveness of the therapeutic approach and identify clinical outcomes at each visit, all while partnering with the patient.

From GO TO IT we are able to tell the patient’s story about how they arrived at the state of health they are in. The matrix makes it possible to determine core imbalances and compose a plan of intervention for the patient. The timeline and matrix information can be used to help repeat the story to the patient. Findings are plotted on the functional medicine timeline and matrix to provide a logical map of intervention. The IFM Core Food Plan provides part of the intervention with additional support from other lifestyle changes and the addition of targeted dietary supplements when appropriate.

**Transforming Everyday Eating Into Meaningful Meals** was a mealtime activity that all attendees participated in and enjoyed immensely. We were taken through the experience of mindful eating with a meal composed of a variety of colorful, nutritious, and delicious dishes. One food that was promoted as a nutrition power house was kale. It was prepared in a Waldorf Salad for lunch and also offered as a power smoothie to illustrate how to start the day with vitality.

Throughout the workshop there was the emphasis on how integral the Nutrition Care Process developed by the Academy of Nutrition and Dietetics, has been to developing the functional nutrition care process and how similar they are in structure and function. Additionally, the role of the functionally trained RD within functional medicine practices was discussed and encouraged at several junctures. Many functional nutrition physicians (including DOs, chiropractors, and MDs) have begun to appreciate the RD as a go to functional nutrition practitioner to incorporate into their practice. A collaborative care team model was encouraged in all practices.

Participants left the workshop with a toolkit of handouts, recipes, suggested items to incorporate in the Functional Nutrition Assessment, and Core Food Plans with very helpful and detailed calorie modification worksheets. Following the workshop there were opportunities to interact with the faculty via an online live forum or through webinars. The opportunity to hear Terry L Wahls, MD, author of Minding My Mitochondria, give an account of how she overcame secondary progressive Multiple Sclerosis, was provided via webinar as part of the post conference follow-up sessions.

Any DIFM member who has the opportunity to participate in IFM offerings will benefit, not only professionally but personally as well. The information provided will be invaluable to one’s practice, and the opportunity to network with the leaders in Functional Medicine as well as other RDs and DIFM members is an added bonus.

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"SNiP" Update – International Nutritional Genomics and a New Networking Relationship for Our Members

Colleen Fogarty
Draper MS, RD, LDN Nutrigenomics Chair, DIFM DPG

The European Nutrigenomics Organization sponsored NuGO Week: Measuring Health: How to Apply Nutrigenomics for Measuring Metabolic Health, September 6-9, 2011. This program was preceded by the International Master Class Nutrigenomics: Defining Health from Basic Science to Industrial Relevance in Wageningen, Netherlands. Both were a smashing success and there was much to learn, from how we define health to how we create the most intelligent research design for understanding optimal health functioning on an “omic” level. A scientific summary of NuGO Week will be published in the January edition of Genes and Nutrition and provided to the DIFM membership.

The International Society of Nutrigenetics and Nutrigenomics (ISNN) held their 5th Congress in Beijing China, October 16-18, 2011. Topics ranged from the genetics of sports performance to the microbiome (all of the microbial genomes that naturally exist within an organism), lipid metabolism, inflammatory bowel disease, and circadian rhythmicity.

I was fortunate enough to present at the ISNN Congress and these are the messages I communicated:

1) Western/conventional nutrition practice can evolve to prevent and heal chronic health issues rather than treat symptoms. The evolution of nutritional genetics in research and practice offers some clues for understanding and utilizing nutrition therapies in healing. It will also fuel the research in practice necessary to design evidence-based intervention strategies.

2) We need sophisticated nutrition professionals who can utilize evidence-based nutritional genomics tools in practice. Registered dietitians have the potential to be the best practitioners for maximizing the beneficial utilization of these technologies. Registered dietitians can be positioned globally to help all populations realize the power of “omics” technologies in practice, and provide the information needed to make the best nutrition and lifestyle choices that promote healing.

My message was well received by the international community and nutritionists from around the globe requested membership brochures and applications for joining the DIFM community. I was asked to teach at an anti-aging clinic center in Beijing and provide support for the on-line clinic under development. It was a nice opportunity to represent registered dietitians internationally.

On October 21st, the ADA Executive Committee approved a Network Alliance between the ISNN and the DIFM and Research DPGs. To kick off this relationship for our members and bring the Research DPG on board, DIFM will host a Nutritional Genomics webinar January 25th, 8PM EST. The president of the ISNN will join the call for the first few minutes. I will provide an introductory lecture tailored to those who know little about the field and also provide an update on the latest advances in genetics research. I will finish the webinar with a discussion of the ISNN relationship.

The following is a description of the ISNN, the rationale for our relationship and the benefits we will receive.

The ISNN was established in 2005 to increase understanding of the role of genetic variation and dietary response and the role of nutrients in gene expression. This purpose is pursued through research and education of professionals and the general public.

The Society is educational in its mission to serve as a center for communication among interested scientists working in several disciplines. Nutrition, genetics, cellular and molecular biology, physiology, pathology, biochemistry, clinical medicine, and public health researchers are studying the role of genetic variation and dietary response in the role of nutrients in gene expression. It is believed that improved communication across these different branches of medical and biological sciences will stimulate new research and increase knowledge of gene-nutrient interactions and genetic variation and dietary response. The Society will assist in interpreting the new facts into sound nutritional advice for the public. As needed, the Society will establish committees to handle scientific and educational aspects.

Part of the mission of the ISNN is to facilitate communications across multiple scientific disciplines to foster research and also to disseminate information to the public in a responsible manner. Dietetics professionals are key members of this interdisciplinary group of collaborators, capable of both participating in the research that can translate to clinical practice applicability and translating the latest information in nutritional genomics science for the public. There is a need for the scientific and dietetics communities to understand how to best collaborate to meet the needs of this field. The scientific community needs to understand the capabilities of registered dietitians and the RD community needs access to resources to become more educated about the science of nutritional genomics. The Research DPG has the obvious focus on research and there is a need for more nutritional genomics research to be done from an RD perspective. Additionally, the DIFM DPG
"SNiP“ Update

has a long-standing focus on educating its members in the area of nutritional genomics due to its tie-in with the systems biology based functional medicine approach the DIFM DPG endorses. Furthermore, nutritional genomics is one of the Academy of Nutrition and Dietetics’ Academy areas of strategic focus. Our collaboration with the ISNN will facilitate the provision of educational opportunities on nutritional genomics for the membership of the DIFM and Research DPGs. In order to support this collaboration, the ISNN and DPGs offer the following:

1) A 20% discount for all DIFM and Research DPG members on ISNN membership which includes:
   a. on-line access to the Journal of Nutrigenetics and Nutrigenomics;
   b. recordings of the most recent annual conference;
   c. and the www.nutrigenetics.net database.
   i. Please note: our members can access the database now!
1. Username: DPG
2. Password: Member832

2) ISNN will provide nutritional genomics content for DPGs’ websites and newsletters.

3) Nutrigenetics.net will provide quarterly reference lists, linked to Pubmed, of the latest applicable published research in nutritional genomics.

4) The DPGs will provide the ISNN information about what a dietitian is and how the dietitian’s capabilities fit with the future utility of nutritional genomics applications in research and practice. This is of particular importance because the nutritional genomics community is comprised mainly of scientists who wish to understand the dietitian’s capabilities and knowledge. By fostering dialogue between professional experts who bring together the scientific knowledge of nutritional genomics and expertise in nutrition practice, the field of nutritional genomics will grow in the most appropriate strategic directions to have the greatest impact on human health. This needs to occur now, so the research can be strategically directed and the dietetics profession has sufficient time to prepare the educational foundation necessary to adapt these tools to their practice and related career paths (public relations, etc.). Otherwise, clinical practice professionals outside of dietetics may sooner step up to the plate and claim more expertise in nutritional genomics than dietitians. Should this happen, dietitians risk losing their strategic position as reliable, credible nutrition professionals in the prevention and treatment of chronic diseases.

5) This networking relationship would position the ISNN and DPGs for future collaborations as the ISNN’s and DPG’s capabilities and resources mature. For example, the ISNN is creating advanced degree, academic coursework that could be tailored to the dietitian, as well as the scientist.

6) The DIFM DPG has offered to share newsletter articles on nutritional genomics with the Research DPG newsletter; starting with a summary of the latest ISNN annual conferences, which will further strengthen ties between the ISNN and the practice groups.

7) Finally, the DIFM DPG will lead a webinar that introduces nutritional genomics and the international research focus, including the work of the ISNN.

Genomics is one of the Academy of Nutrition Dietetic’s areas of priority focus. This collaboration fits in with the Academy’s 1994 Future Search Conference that RDs become educated in the field of Nutritional Genomics. It also supports the House of Delegates’ motion adopted on 11/10/08 to facilitate education and research in Nutritional Genomics. The DIFM and Research DPGs are poised to be leaders in these initiatives by collaborating with the ISNN and contributing to the development of education and research.

Telomere Length As a “Biological Age” Indicator from page 53


Resource Review

Blending Science with Spices
Gita Patel
http://feedinghealth.com/ Feeding Health: Etna, NH; 2011: 151 pp
Softcover: $19.95
ISBN: 978-0-9835258-0-6

IFM member Gita Patel’s new book, Blending Science with Spices, provides more than just recipes for vegetarian, gluten free, and Indian dishes. It is a journey into new tastes and tips for healthy living that illustrate how the reader can, and why they should, incorporate the many flavors of food and spices into their diet and how to do it almost instantaneously and painlessly!

The introduction emphasizes the importance of “Feeding Health” and how, by not doing so, the American population is setting itself up for chronic disease. Patel describes how an unbalanced diet contributes to disease. She provides tips for organizing one’s kitchen with time saving tips including a recipe for using a food processor to make Indian spices that can be refrigerated or frozen for future use. Her basic staples list is just that; basic, short, and sweet, and includes ideas from beans to vegetables. She emphasizes use of the freezer for items prepared in bulk that can be pulled for a quick meal.

Recipes begin with an introduction to cooking with a description of vegetables and their classification. Many of the recipes start with a simple seasoning of Vaghar, a hot oil seasoning that is used to enhance the flavor of foods in the absence of added sodium. Patel describes how to use this hot oil to obtain its maximum nutritional benefit. The tasty bean, grain, yogurt and fruit dishes are simple to prepare and use the staples from the pantry list. Included are quick, simple, family-friendly meal suggestions for the working person. Each recipe is accompanied by a nutrition analysis that includes Omega-3 fatty acid content that is important to vegetarians and vegans who may not consume oily fish.

Section 3 is comprised of menus, entrees, the health benefits of herbs and spices, and some important techniques for getting the most from sprouted grains. A glossary and references are helpful for those who may be unfamiliar with some of the typical Indian herbs and spices.

This book provides a different approach to a healthy plant based diet with recipes, tips, and nutrition science that support a healthy lifestyle, not a diet. It is an ideal book for persons who are just beginning to explore healthy eating and for those who have already chosen to eat healthfully.

Reviewed by Sarah Harding Laidlaw, MS, RD, CDE, DIFM Newsletter Editor. Contact Sarah at peaknut@cascadaccess.com or 970-261-2356.

Resource Review

Pocket Atlas of Tongue Diagnosis: With Chinese Therapy Guidelines for Acupuncture, Herbal Prescriptions, and Nutrition
Claus Schnorrenberger, Beate Schnorrenberger
2nd ed. Thieme: New York; 2011: 312 pp
Soft cover; $59.99
ISBN: 978-3-13-139832-9

In Chinese medicine, observing the tongue is an integral part of the examination that is needed to make a Chinese medical diagnosis. The appearance of the tongue reveals a distinctive relationship with internal organs and systems. In Chinese Medicine, the tongue reflects all of the basic influences of health. In Functional Medicine, tongue diagnosis is essential to the nutrition assessment.

The Pocket Atlas of Tongue Diagnosis puts theory into practice, providing readers with a systematic way of evaluating a patient’s tongue for specific health conditions. The first half of the book provides an introduction to tongue developmental history and physiology, and explains individual tongue characteristics. Detailed drawings of the tongue and its relationship to the internal organs, vessel pathways (circulatory system), lymphatic, and gastrointestinal pathways
illustrate its close relationship to all parts of the human body. The second half details techniques and procedures used for identifying the characteristics of tongue shape and variations and uses real case studies to illustrate to the reader an understanding of tongue diagnosis.

There are more than 200 full-color photographs of Western tongues with medical assessment of 28 case histories demonstrating a variety of clinical scenarios that help readers develop a holistic approach to diagnosis. Treatment suggestions for using acupuncture, herbs, and nutrition accompany each clinical photograph. The appendix groups foods according to the Five Elements and lists the 21 groups of Chinese medicinal herbs, minerals and animal products that are essential to Chinese healing.

This book clearly illustrates the application of a Chinese proverb which reads: Bai wén bù rú yi jiàn (it is better to see [something] once than to hear [it] a hundred times). Any reader involved in functional medicine would benefit from having this resource available to enhance the nutrition assessment. Since the mouth and tongue are the pathway to the gut where useful functions occur such as inhibiting the growth of harmful microorganisms, defending the body against some diseases, and training the immune system to react exclusively to pathogens, the importance of a healthy tongue cannot be overlooked.

Reviewed by Sarah Harding Laidlaw, MS, RD, CDE, DIFM Newsletter Editor. Contact Sarah at peaknut@cascadeaccess.com or 970-261-2356.

### Resource Review

#### Omega-3 Handbook: A Ready Reference Guide for Health Professionals

Gretchen K. Vannice, MS, RD  
www.omega3handbook.com  
2011: 113 pages, softcover, $18.00  

The Omega-3 Handbook: A Ready Reference Guide for Health Professionals is an easy-to-read evidence-based resource that will help health professionals and savvy consumers navigate the myriad of information available on essential fatty acids. Beginning with an introduction and chapter one on basic chemistry, an overview of the metabolic pathway of ALA to DHA is provided. The author also includes the biological functions of EPA/DHA, intake and recommendations for children and adults, the importance of an optimal ratio of omega-3 to omega-6 fatty acids, and safety considerations.

The author discusses the timelines needed to significantly increase blood and tissue levels of EPA and DHA in order to produce a therapeutic outcome such as improvements in mental health or arthritic conditions. Included are the names of laboratories that provide validated testing of blood levels of omega-3 fatty acids, which will be useful to health professionals. Chapter one and subsequent chapters include useful tables, charts, a “Frequently Asked Questions” section, and a current reference list.

Chapter two focuses on how to obtain omega-3 fatty acids from fish, plants (mostly as alpha-linolenic acid), and fortified foods (eggs, beverages, and snack foods). Amounts of EPA/DHA recommended to reduce the risk of heart disease, including sudden death, are summarized. Plant sources of ALA are presented with interesting paragraphs on the contributions of flax, chia, and hemp seeds, avocado, nuts, and vegetable oils. DHA from algae is reviewed along with a relative newcomer, stearidonic acid (SDA), a genetically modified omega-3 from soybean oil.

Omega-3 dietary supplements are thoroughly discussed in chapter three with straightforward answers to questions and concerns about how much, how often, and which type of supplement is best. What makes this book unique is the author’s history with the fish oil industry and comprehensive understanding of how fish oil supplements are manufactured, with particular attention to quality. The book concludes with a chapter on resources for omega-3 fatty acids with recommendations for adults and children from various organizations around the world.

The Omega-3 Handbook: A Ready Reference Guide for Health Professionals is a unique addition to other books on omega-3 fatty acids and Vannice does a thorough job of providing us with a resource full of practical tips neatly organized into four concise and extremely informative chapters. This book provides clear, factual information that health professionals will want to know about and will be a frequently used addition to their health libraries.

Reviewed by Leslie Kay-Getzinger, MS, RD. Independent nutrition consultant located in Southern California. Contact Leslie at IHMLeslie@aol.com.
Interactions with variants in 4 genes (FTO, MC4R, NPC1 and APOA2) with high-fat foods or with high saturated-fat foods are described. Such information may eventually lead to targeted treatments.

The affect of curcumin on gene expression of colonocytes is described, with relevance to colitis and inflammatory bowel diseases.

PubMed ID: 21941510.
This review updates information on vitamin D and vitamin D receptor (VDR) in relation to gene expression and epigenetics, with relevance to the prevention and treatment of lung diseases.

Introductory overview of the basic principles, terminology, and applications of nutrigenetics and nutrigenomics which may transform nutrition and dietetics, and the important implications of such transformation.

Risk of autism may be reduced by use of prenatal vitamins, especially among mothers with gene variants affecting one-carbon metabolism.

The affect of both physical and social environments on gene expression and health is described, including its growing relevance to public health.

A variety of considerations about genetic testing are presented. Topics include direct-to-consumer testing, government regulation, ethics, social responsibility, genetic counseling, and the need for better education about genetics for both professionals and the public at large.

Epub 2010 Dec 15. PubMed ID: 21159786
Supplementation of magnesium (500 mg per day as magnesium citrate) for 4 weeks in overweight subjects resulted in favorable gene expression changes.

Inquiries about above references? Please contact Ron L Martin, MS, President, Nutrigenetics Unlimited, Inc.; ron@nutrigenetics.net.
Please check out www.isnn.info/ to learn more about the dietitian membership discount.
Chair’s Corner: Kathy Moore, RD, CCN

Kathy Moore, RD, CCN
DIFM Chair 2011-2012

It was a successful FNCE for DIFM last September! I want to thank the many volunteers and speakers who helped make our Pre-FNCE workshop a great learning event, covering “Essential Tools for Practice”. Our member meeting and breakfast featured new research on the health benefits of cranberries…who knew there were so many! Elsewhere in this issue you will find a review of these meetings and events. We are most grateful for the support of our sponsors and exhibitors: Cell Science/ALCAT, Bio San Innate Response, Professional Health Products, and Cranberry Marketing Committee.

Our sincere thanks and appreciation are also extended to the 15 members of the Credentialing Task Force, who worked tirelessly for several months over the summer to create the application for “Certified Specialist, Integrative and Functional Nutrition”. This application has been submitted to Council on Future Practice, and is now under review. We hope to have a reply in early spring.

Speaking of webinars, DIFM has hosted several great ones in the past two months. If you missed any of them, you still can access them on www.integrativerd.org website, where they are archived. (Thank goodness for second chances!) Each are great opportunities to learn and expand your skills.

I hope you enjoyed a wonderful holiday season, and we will soon be seeing those first signs of spring! To your good health, with blessings,
Kathy Moore, RD, CCN, Chair

Editor’s Notes: Sarah Harding Laidlaw, MS, RD, MPA, CDE

Welcome to 2012 and the many changes that it brings to us. We are now officially the Academy of Nutrition and Dietetics* (pronounced A.N.D.), which many of us old-timers will find it takes some getting used to. However, from those members I have talked with, they believe as I do, the name change better represents our organization and eliminates the confusion between other organizations with the same acronym!

I am certain that most if not all of you have been inundated with emails regarding the recent Centers for Medicare and Medicaid Services’ (CMS) decision to exclude registered dietitians from direct billing for intensive behavioral therapy for obesity in primary care. I hope that each of you took the time to sign the petition to encourage the Obama administration to urge CMS to reconsider. This move could have a significant impact on our role as dietitians no matter the venue in which we practice as it can effect how other insurers consider reimbursing for obesity related counseling.

This issue of the newsletter recaps some excellent presentations from this year’s FNCE as well as the Functional Nutrition Course offered by the Institute for Functional Medicine. Make sure that you read the summary of the pre-FNCE workshop, especially if you were unable to attend. It will whet your appetite for more information that can be obtained from the recordings and material you may order for CPE credit from the DIFM website. It is often difficult to decide what educational opportunities to take advantage of since there are many to choose from. Make sure that you regularly check the DIFM website, www.IntegrativeRD.org, for all of the webinars and special programs that are available to our members at no cost or often at a substantial discount. These can’t help but enhance our preparation for certification in functional nutrition when that opportunity arrives as well as our day to day practices.

As always, I encourage members to participate in the newsletter as an author, reviewer, or just by making suggestions for article topics. We are also looking for someone to coordinate resource reviews for the newsletter. This will involve compiling books, videos, articles for review and coordinating their review. If you would be interested in this position, or just want to offer to write or review, please drop me an email: peaknut@cascadeaccess.com.

I wish you the best in health for 2012.
Sarah
* Academy for short.
Annual Report June 2010-June 2011
Report to members: Another Successful Year

Dietitians in Integrative and Functional Medicine (DIFM) had another successful year of providing members exceptional offerings for professional development, networking, and leadership opportunities.

Contributions to the success of this year include:

• A frequent update of DIFM website content.
• Enhanced professional development programs including webinars and free continuing professional education from DIFM newsletter articles.
• The DIFM list-serve is a valuable member resource for members to exchange questions and information.
• Continuing DIFM networks with the American Botanical Council, Arizona Center for Integrative Medicine, Omega 3 Learning, Center for Mind Body Institute, and Institute for Functional Medicine provide opportunities to expand members knowledge base on integrative and functional medicine.
• The DIFM newsletter continues to be a much anticipated member benefit with one print and 3 electronic newsletter each year.
• Access to the Natural Medicines Comprehensive Database, an outstanding resource for practitioners.
• Publication of Standards of Practice and Standards of Professional Performance (SOP/SOPP) for Registered Dietitians (Competent, Proficient, and Expert) in Integrative and Functional Medicine (JADA, June 2011).
• An increase in membership from 2594 to 2825
• Sale of 2008 and 2009 PreFNCE symposium CDs.
• Co-sponsoring yoga sessions at FNCE with the Academy of Nutrition Dietetics Foundation.
• The 2010 Food and Nutrition Conference and Exhibition (FNCE) in Boston provided members with networking opportunities and several sessions with fantastic attendance.
• The pre-FNCE Symposium: Cognitive Function Throughout the Lifecycle was most informative and well received.
• The Spotlight Session: Integrative Medicine in Depression and Mood Disorders: Taking Research to Practice with David Mischoulon, MD, PhD, Associate Professor at Harvard Medical School and Gretchen Vannice, MS RD received rave attendee reviews.
• The ever popular DIFM breakfast sponsored by Nutrilite provided free CPEUs on phytonutrients.

Our accomplishments could go on and on. The success of DIFM is due to this year’s outstanding leadership team, Academy of Nutrition Dietetics staff, executive assistant, Amy Jarck, and most importantly our members. With your support, encouragement, and ideas, DIFM continues to grow and be the great DPG, of which we can all be proud.

Respectfully submitted,
Deborah S Ford MS RD CCN
Past Chair DIFM DPG
Co-Chair SOP/SOPP

New Release! Diabetes Mellitus Toolkit
Authors: Rosalyn Haase, CDE, MPH, CD, BCADM, RD; William I. Swan, RD, LDN;
Naomi Wedel, MS, RD, CDE, BC-ADM

The Diabetes Mellitus Toolkit is designed to assist the registered dietitian in implementing the ADA Diabetes Type 1 and 2 Evidence-Based Nutrition Practice Guideline for Adults. The toolkit includes:

• Sample initial and follow-up progress note for documentation
• Case study highlighting the care of a Generalist, Specialist and Advance RD
• An outline of the Encounter Process for initial and follow-up encounters
• Sample forms for Food Recall, Encounter Contract and Client Agreement for Care

To purchase visit www.adaevidencelibrary.com and click on “Store”.

Academy of Nutrition and Dietetics
## DIFM Balance sheet as of May 31, 2011

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## Members in the News

Congratulations to Colleen Fogarty Draper MS, RD who received the AND Foundation's Mary Swartz Rose Memorial Graduate Scholarship to pursue her doctoral research work in nutritional genomics on October 28, 2011. The donor is the International Life Sciences Institute (ILSI).
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