

TheDigest

THE COCHRANE COLLABORATION: Providing up to date evidence of the effects of health care

by Janet Yarrow MS, RD, CDN

A little known resource for evidence- based healthcare information is the Cochrane Collaboration (www.cochrane.org), an international not-for-profit organization that produces and disseminates healthcare information through systematic reviews. As the world's leading producer of systematic healthcare reviews, the Cochrane Collaboration provides the most reliable and up to date healthcare information in an easy to access and easy to understand manner. Consumers, healthcare providers, policy makers, practitioners, patients and their caregivers can use this information to make well-informed decisions about health.

The Cochrane Collaboration maintains a database of healthcare reviews. All Cochrane reviews are systematic reviews. Systematic reviews start with a clearly formulated question that uses systematic and explicit methods to identify, select and critically appraise all relevant high quality studies. The conduct of the review and its analyses should follow clear, pre-specified criteria, with checks along the way, in order to minimize the possibility of ending in a biased conclusion. Unpublished as well as published studies are included, as are foreign language studies. The results of the studies are then synthesized together and summarized as the systematic review.

Considered the gold standard for determining the effectiveness of different health interventions due to its rigorous research methods, the Cochrane Collaboration maintains a library of 3,625 complete Cochrane reviews and 1,921 protocols for additional future reviews. With titles such as Herbal medicine for low-back pain, Low glycaemic index, or glycaemic load, diets for diabetes mellitus, Cranberries for treating urinary tract infection and Vitamin B12 for cognition there are plenty of interesting reviews for nutrition professionals.

When you log onto www.cochrane.org and read through the reviews, keep in mind that nearly 15,000 medical professionals, healthcare consumers and other specialists in more than 100 countries volunteered their time and skills to create these reviews. This is truly a world -wide collaboration.

Cochrane Centers are located all over the world. The USA Cochrane website <http://apps1.jhsph.edu/cochrane/> has a free online course *Understanding Evidence-Based Healthcare* on the website.

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Nuts and Bolts

What is the Standard Deviation and the z score?



Inés Anchondo Dr. PH, RD, LD, CSP, MPH

The standard deviation is a measure of the spread of the distribution of the data. It represents the average distance of the observed values from the mean. In the Gaussian or bell shape curve about two thirds (68%) of the population data lies within 1 standard deviation (or 1 z score) of the mean. And, most of the data values (95%) lie within 2 standard deviations (or 2 z scores) of the mean. The z score is a standardized score; it represents the number of standard deviations from the mean¹.

The standard deviation is most useful for data that follows the bell shape curve but it can be also useful for skewed distributions as an “intermediate tool” for advanced statistical analysis². The z score can be helpful in putting in context data taken over time.

The steps¹ to calculate the standard deviation are:

1. Calculate the mean.
2. Calculate the distance of each value from the mean (value minus mean).
3. Square the results.
4. Sum the squares of the results.
5. Divide the sum of the squares of the results by the number of values minus 1 (variance).
6. Calculate the square root of the variance.

The z score formula is $Y - \text{mean}$ divided by the standard deviation.

Both, the standard deviation and the z score can help in evaluating weight over time. For example, the weights of a girl over several months (from 7 years to 13 years old) are: 40.8 kg,

46.6 kg, 62.8 kg, 71.5 kg, 75.6 kg, 82.3 kg, 81.9 kg, 84.5 kg, 90.9 kg, 90.0 kg, and 91.1 kg. The sample mean is 74.3 kg and the standard deviation is 17.4 kg. To compare her weight over time it is necessary to calculate the z score for each weight. In this case, the first graph showed her BMI at 32 and increasing over time. However, the second graph shows her BMIz decreasing over time and at about 2.1 to 2.2 standard deviations from the mean in the last 3 years.

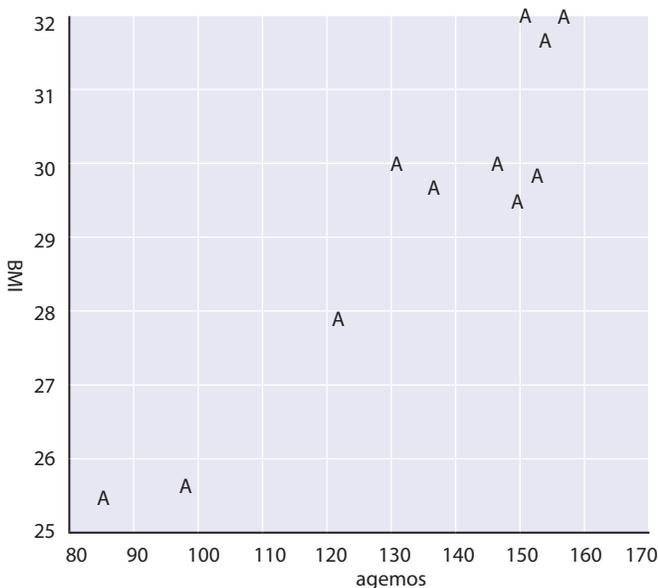
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2. Motulsky H. *Intuitive Biostatistics*. 1st ed. New York-Oxford: Oxford University Press; 1995.

THE SAS SYSTEM

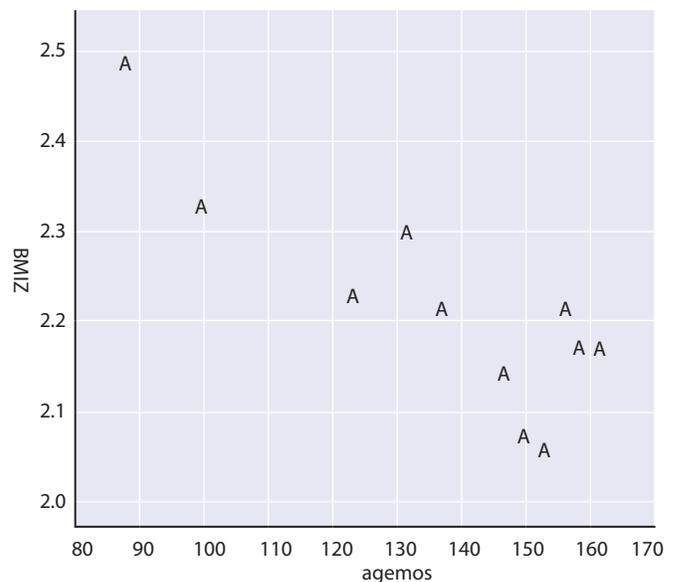
Graph 1 - Plot of BMI*agemos

Legend – A=1 obs, B=2 obs, etc.



Graph 2 - Plot of BMIZ*agemos

Legend – A=1 obs, B=2 obs, etc.



Journal Wins Association Trends Silver Medal

On December 15, 2008, we received notice that the *Journal of the American Dietetic Association* received a Silver Medal in the 2008 Association Trends All-Media Contest in the "Scholarly/Technical/Scientific Journal" category. This award recognizes the overall quality of a single issue published in the past year, judging entries based on appropriateness, appearance, layout, style, content, and effectiveness. The *Journal* was honored for its October 2008 issue, focusing on aspects of pregnancy and infant care.

This is the third award that the *Journal* has received in the last two years. Previously, the July 2006 issue won the Silver Medal in the Association Trends 2006 All-Media contest, and the November 2007 issue won the American Society of Healthcare Publication Editors Gold Award for Best Computer-Generated Cover for its hunger and malnutrition artwork.

Professor of Nutritional and Health Sciences at the University of Nebraska **Nancy M. Lewis, PhD, RD**, received the 2008 Distinguished Alumni Award from the New Mexico State University College of Agriculture and Home Economics.

From the Chair Elect

Jeanene Fogli PhD, RD

Greetings Research DPG members!

I hope everyone is having a productive winter full of interesting research and new discoveries.

I would like to take the opportunity to introduce myself, as the Incoming Chair of the Research DPG. I am currently working for a clinical trials organization where I consult on drug development for clients ranging from very small biotechs to large pharmaceutical companies. Given the obesity and type 2 diabetes epidemics, there is much need for drug discovery in this area, and dietitians who develop nutritional education materials, assessment, and analysis tools for clinical trials on these compounds. I think this will be a growth industry for dietitians over the next few years.

As a former General Clinical Research Center Dietitian, I am so pleased to welcome our colleagues into the Translational Research Center sub-unit. We have had a tremendously successful year integrating this group of exceptional professionals into our group. With the support of Laurie Herraiz, RD and Cewin Chao, MS, RD, MBA, both members of the CTSA sub-unit, we hosted an exceptionally well attended session on High Fructose Corn Syrup which generated some of the most lively discussion at all of the Food & Nutrition Conference & Expo (FNCE).

As a relatively small DPG we are the unique position to develop more personal connections and contacts with all of our members. Over the next 12-18 months we will be moving in this direction. Updating the look and usability of the website, adding items to the newsletter that would be of interest to members, and developing a network for members all over the US where members can utilize the expertise of one another.

We have also been granted the ability to take on student members at a reduced rate. We hope that acquiring these members early in their career will lead to life long membership in our DPG!

I am so excited about our many initiatives and welcome any other suggestions you might have. Please feel free to contact me any time Jeanene.fogli@i3research.com

Wishing you happy researching!

Jeanene

Secretary's Message



Martha McMurry MS, RD

Googlegroups Electronic Mailing List for RDPG Members

One of the advantages of RDPG membership is our electronic mailing list (EML) at <http://groups.google.com/group/ResearchDPG>. This is similar to a listserv and allows members to communicate with the RDPG as a whole or to be able to have email conversations with individuals or groups of members. The email addresses of nearly all RDPG members are listed. At this time most of the 654 current RDPG members are included in the EML. Those that are not on googlegroups did not list email addresses on the annual ADA membership registration form or else they do not want to participate in this EML and have opted out of the group.

Our EML is considered "low use" as we have relatively few emails posted, less than one per day on average. In the first five weeks of 2009, the number of emails sent to the group ranged from 2-7 per week with an average of four emails per week. These included announcements of new jobs in the research dietetic community, invitations from ADA to participate in writing or reviewing articles, questions about research topics and methods, and requests for volunteers for RDPG activities. For example, an informative discussion about modification of dopamine levels took place on the EML in response to a question from a member.

This EML could be more widely used. It would be great to have more questions sent to our listing because there are many talented research experts in the DPG on a wide variety of food and nutrition topics. It would be great to hear about member successes—grants funded, articles published, new findings translated into practice guidelines, a new book or other achievements. Ask your colleague to announce it if you are shy about sending your achievement. Hearing about successes will help all our practices! Other listservs also discuss policy, new legislation, nutrition controversies, and much more. Our EML will be as good and as interesting as the members make it.

I encourage you to add information about yourself on googlegroups by going to "Edit My Membership." You can specify how you want to receive emails—either on the website when you chose, as a daily summary of any new activity, as combined daily emails bundled into a single email message, or you can receive each email as it is sent. Most members do the latter since the activity level is low.

You can also choose the name that you want shown in the "from" section when you email to the group. Many members have not specified a name and therefore only the email address is shown. Some addresses do not indicate the identity of the sender. I encourage all of you to specify your professional name under "nickname" in "Edit My Membership". You can also add a profile with a photograph and other information about yourself in a "bio."

All of these options can make our group feel friendlier and help us get to know each other better. Go to "members" to see the profiles, and modify your own in this list.

This googlegroups EML is private—members must be invited to join, and only members can read the communications or post new messages. This allows our group more privacy and the freedom to control who sees our information and communications.

If you are not on the RDPG googlegroups EML or if you have difficulty using or modifying this service, please contact me at mcmurrym@ohsu.edu or call me at 503-494-6232.

Celebrate eat right!
Registered Dietitian Day
Nutrition Facts from the Expert
March 11, 2009

Registered Dietitian Day
Registered Dietitian Day recognizes the valuable contributions of Registered Dietitians throughout the year. The theme, "Registered Dietitian – Nutrition Facts from the Expert," highlights the importance of seeking nutrition guidance from a Registered Dietitian.

Upcoming Conferences

Organization	Meeting date/location	Deadline for abstract submission
49th Cardiovascular Disease Epidemiology and Prevention and- Nutrition, Physical Activity and Metabolism www.americanheart.org/presenter.jhtml?identifier=3056462	March 10-14, 2009 Palm Harbor, FL	Closed
American Dietetic Assoc. Weight Management and Diabetes Care and Education DPG Joint Symposium "Diabetes and Obesity: Building Collaborative Practices" www.wmdpg.org	March 20-22, 2009 Grapevine, TX	
American College of Sports Medicine 13th Annual Health & Fitness Summit	March 25-28, 2009 Atlanta, GA	
5th International Symposium on Diabetes and Pregnancy www.kenes.com/diabetes-pregnancy/	March 26-28, 2009 Sorrento, Italy	Closed
3rd International Congress on Prediabetes and the Metabolic Syndrome	April 1-4, 2009 Nice, France	Closed
American Dietetic Assoc. Sports, Cardiovascular, and Wellness Nutrition 25th Annual Symposium "The Seven Wonders of Wellness" www.scandpg.org	April 16-19, 2009 Scottsdale, AZ	February 6, 2009
33rd National Nutrient Databank Conference Innovations in food composition and nutrient research: A global perspective http://www.nal.usda.gov/fnic/foodcomp/conf/	April 17, 2009 New Orleans, LA	Closed
Experimental Biology (EB) www.faseb.org	April 18-22, 2009 New Orleans, LA	Closed
Society of Behavioral Medicine www.sbm.org/meeting/2009/	April 22-25, 2009 Montreal, Quebec, Canada	Closed
28th American Overseas Dietetic Association (AODA) Conference: "Global Opportunities for the RD: Translating Evidence-based Research into Practice." www.eatrightoverseas.org	April 23-25, 2009 Kuala Lumpur, Malaysia	
International Conference on Diet and Activity Methods www.icdam.org	June 5-7, 2009 Washington, DC	Closed
American Diabetes Association 69th Scientific Sessions http://professional.diabetes.org/Meetings_GeneralList.aspx	June 5-9, 2009 New Orleans, LA	Closed
Food and Function 2009- International Scientific Conference on Nutraceuticals and Functional Foods www.foodandfunction.com	June 9-11, 2009 Zilina, Slovakia	March 31, 2009
International Society for Behavioral Nutrition and Physical Activity www.isbnpa.org	June 17-20, 2009 Lisbon, Portugal	January 31, 2009
School Nutrition Association http://docs.schoolnutrition.org	June 29-July 2, 2009	Las Vegas, NV
Society for Nutrition Education Food Security: Local to Global www.sne.org/conference	July 11-15, 2009 New Orleans, LA	
CDC's Inaugural Conference on Obesity Prevention And Control: Weight of the Nation. www.weightofthenation.org	July 27-29, 2009 Washington, DC	February 14, 2009
XXXVI International Congress of Physiological Sciences Function of Life: Elements of Integration www.iups2009.com	July 27-August 1, 2009	Closed
50th Annual Meeting of the American College of Nutrition "Advances in Clinical Nutrition"	October 1-4, 2009 Orlando, FL	
19th International Congress of Nutrition (ICN 2009) www.icn2009.com	October 4-9, 2009 Bangkok, Thailand	February 14, 2009
ADA's Food & Nutrition Conference and Expo www.eatright.org	October 17-20, 2009	Denver, CO
American Public Health Association Annual Meeting, "Water and Public Health: the 21st Century Challenge".	November 7-11, 2009 Philadelphia, PA	

Member Spotlight

Alanna Moshfegh



Alanna Moshfegh, MS, RD works for the US Department of Agriculture (USDA) at the Beltsville Human Nutrition Research Center in Maryland. Her role as the Research Leader for the Food Surveys Research Group of the Agricultural Research Service has been integral in establishing Beltsville as the largest of the USDA's human nutrition research facilities. Learn more about Alanna's research background in this edition of the RDPG Member Spotlight.

I received a Bachelor's of Science degree in nutrition and dietetics from North Dakota State University and a Master's of Science degree in nutrition and food service management from the University of Nebraska where I also completed a dietetic internship during the same time. I have worked at the US Department of Agriculture for my entire career. My career path from the beginning was through my "dietetics family." My internship director, Dr. Marie Knickrehm, and my first boss at the USDA, Dr. Grace Ostenson, were colleagues in graduate school at the University of Wisconsin. Both of these dietetic professionals were outstanding professional mentors and well-known researchers in their own respect.

When I first began at the USDA, I worked with the Federal food programs providing expert technical nutrition advice and assistance to the development of federal food program regulations and operations. Here I learned about the USDA's work in monitoring the diets of Americans through national surveys. The survey work fascinated me and I began to read and learn as much

as I could about dietary intake methodologies. And, along the way, I was able to work on dietary studies internationally, first in what was then the Trust Territories of the Pacific Islands and in the Kingdom of Saudi Arabia. I began work as a nutrition researcher for the USDA's nationwide food consumption surveys in the early 1980's and assumed my current position as Research Leader for these dietary surveys some 13 years ago.

As the Research Leader of the Food Surveys Research Group, I lead a staff comprised of nutrition researchers, food technologists, statisticians, and administrative and computer support personnel in a national program of research to monitor the food consumption behavior and nutritional adequacy of American diets. I provide dietary survey leadership in the collection, review, processing, and public release of national dietary data of Americans from What We Eat in America, the dietary interview component of the National Health and Nutrition Examination Survey (WWEIA, NHANES). This is a continuous survey that collects two days of 24-hour dietary recall data on nearly 5,000 individuals of all ages from across the US each year. The group I lead is responsible for the dietary data collection method, development and maintenance of the food and nutrient database, and data analysis for public release. Our most recent national dietary data release was last August with the 2005-2006 WWEIA, NHANES that included food and nutrient intake data for nearly 20,000 dietary recalls.

In addition to overseeing the ongoing survey work, I have been involved in a study to validate the 24-hour recall method used in WWEIA—the USDA's 5-step Automated Multiple-Pass Method (AMPM). The development, programming, and testing of the AMPM took 3 years. In 2002, we began using the method for WWEIA and also began the 2-year AMPM Validation Study on 524 subjects. The study used the doubly labeled water method to validate energy intake. Our results were quite good, with the AMPM reporting energy intake within 3% accuracy for normal weight and 16% for overweight. What a career highlight it has been to develop a dietary intake method, launch it in national data collection, and validate its accuracy with such favorable results! Of course, this work could not have been accomplished without the group of wonderful professionals who were involved.

I also credit my involvement with ADA, especially with my state affiliate, in affording me wonderful opportunities where I could learn and practice strategies for developing my leadership skills. These included planning and organizing meetings for my district association, serving as the treasurer and president of my state affiliate, and many other roles. Also, the many dietetic professionals I interact with both in my career and through professional collaborations have been tremendous teachers to me. Most of them don't even know they played that role. But, I have always tried to emulate the best qualities of those professionals that I regard as "top" in their area.

My career goals are to continue to advance dietary intake assessment methodology so that the results can be used to identify ways to improve dietary habits and ultimately the health of Americans.

My advice to young researchers would be to select an area of dietetics that you are passionate about—that you enjoy working in more than anything else. Conducting research is not for the light-hearted. Research takes focus, determination, and constant searching for what

is the best method, approach, or right question to be answered. The reward of contributing to improving the best way to practice dietetics—whether it is clinical, foodservice management, or national dietary intake assessment—makes research so worthwhile.

Research is the means through which to advance knowledge to the best. Research in any field is critical, and perhaps more so in the field of dietetics. With the technological

advances being made in nutrition and related areas such as disease prevention and genetics, research in the field of dietetics must play more of a role than it has in the past to assure that we are using the best practices. As dietetic professionals, it is our responsibility to incorporate research into any area of practice we pursue, from conducting research to applying research to enhance our practice.

eat
right. American Dietetic Association

Chronic Obstructive Pulmonary Disease (COPD) Evidence-Based Nutrition Practice Guideline Now Available

ADA unveils the COPD Evidence-Based Nutrition Practice Guideline, a resource for registered dietitians involved in providing MNT to people with COPD.

The guideline must be individualized, but it will assist the RD in successfully integrating MNT into the overall management of people with this condition. Recommendations in the guideline are based on a systematic review of the literature.

Topics include:

- Provision of MNT for people with COPD
- Energy Needs
- Quality of Life
- Medical Food Supplements
- Bone Density
- Use of supplemental oxygen



To download, visit www.adaevidencelibrary.com.

Research History

Dietary Pattern Research and Other Contributions from the Framingham Nutrition Studies

Heather Padilla, Boston University School of Medicine

In 1948 a study began in the town of Framingham, Massachusetts with the objective to learn more about cardiovascular disease (CVD). By employing a longitudinal study design, researchers were able to follow a large group of participants with no previous history of CVD over a great length of time to determine what factors lead to the development of CVD. Prior to the study, little was known about the disease but its increasing prevalence made the need for research urgent. The Framingham Heart Study, a joint endeavor of the National Heart, Lung, and Blood Institute (NHLBI) and Boston University, has since made important scientific contributions and published over 1,200 articles in leading medical journals. The study has gained an iconic status for the standards it has set as one of the longest running, epidemiological studies in medical history¹.

The first study cohort involved 5,209 men and women between the ages of 30 and 62. Baseline physical examinations and lifestyle interviews were conducted at the initial start of the investigation and subjects returned to the study continuously every two years for physical exams, medical histories, and laboratory tests. The second generation of cohorts was enrolled beginning in 1971 for similar exams. These subjects were made up of 5,124 of the original subjects' adult children and their spouses (Framingham Offspring/Spouse Study (FOS)). In 2002 the third generation of participants, grandchildren of the original cohort, was enrolled. The first exam of the third generation

study was completed in July 2005 and made up of 4,095 participants. By procuring multiple generations of participants, the Framingham Study has been strengthened in its ability to understand CVD and the disease's affect on families. Research on heritable traits and social influences can help in the production of ways to prevent, diagnose, and treat CVD.

In 1984, Framingham added a nutrition component to its research, which became the Framingham Nutrition Studies (FNS). The primary aims of the FNS were to 1) form valid nutritional risk assessment methods, 2) evaluate food and nutrient intake trends in comparison to professional health and nutrition guidelines, 3) explore diet and disease relationships (controlling for genetic, biological, and behavioral factors), and 4) transform research into preventive nutrition interventions². Data for the first studies was collected from the FOS cohort at Exam 3 (1984-1988). Multiple findings have come out of the FNS including techniques for estimating nutrient intake, dietary pattern analysis, research planning and questionnaire design, and dietary behavior and relationship to various diseases like heart disease, obesity, and metabolic syndrome.

One of the most important outcomes of the FNS, as mentioned above, has been the identification of unique, non-overlapping dietary patterns. With the ability to characterize food behavior and overall dietary quality, dietary patterns hold valuable implications for epidemiological research.

In order to characterize food intake patterns, the multivariate technique known as cluster analysis was applied to a 145-item food-frequency questionnaire (FFQ) administered to Framingham subjects. Five distinct patterns emerged from the analyses for each gender. The 5 patterns for women were 1) Lighter Eating (low daily consumption of sweets, other fats, and bread and margarine), 2) High Fat (higher mean daily consumption of diet beverages, vegetable fats, breads, and sweets and other fats), 3) Heart Healthy (higher consumption of vegetables, lower-fat foods, fruits, lower-fat dairy products, whole grains, and soups), 4) Empty Calories (highest intake of sweetened beverages (about 10 times as much as other women) and fats, oils, and sweets), and 5) Wine and Moderate Eating (higher consumption of high-fat dairy foods and snack items and more wine and cholesterol-rich foods like eggs and organ meats on a daily basis). The 5 patterns for men were 1) Lower Variety (lowest consumption of most food groups), 2) Empty Calories (highest intake of sweets, salty snacks, high-fat animal protein foods, and refined grains and the lowest intake of low-fat milk), 3) Transition to Heart Healthy (highest intake of vegetables, fruits, whole grains, oils, and lower-fat foods, soup, organ meats, various types of fish, and carbohydrates as well as lowest consumption of refined grains, desserts, saturated fat, and total fat), 4) Average Male (high intakes of diet and decaffeinated beverages and lowest consumption of leaner proteins), and 5) Higher Starch

(higher levels of leaner protein foods (low-fat red meats and poultry), firm vegetable fats, refined grains, and desserts). Associations have been found between the dietary patterns identified by the FNS and an array of preclinical diseases and metabolic conditions³. For example, the most nutrient dense eating pattern in women, aptly named the Heart Healthy cluster, also had the lowest probability of developing CVD. The Empty Calorie cluster, on the other hand, the lowest nutrient dense eating pattern, had the highest probability of developing CVD compared to other groups⁴.

Information concerning dietary patterns can be useful in developing appropriate interventions and targeting certain subgroups of the population that might respond to specific dietary pattern messages. Recently, the FNS undertook a study to determine the validity and

performance of the classification algorithms used to name new individuals into one of the pre-determined five dietary patterns and concluded that the Framingham approach is a sound method for identifying the unique dietary behavior of adults and can be used as a model for other composite dietary quality indices³. Research is also being conducted to examine the long-term stability of nutritional risk in dietary patterns in adults.

In conclusion, many important contributions to the field of nutrition have come from the FNS since the study's beginning just a few decades ago. Dietary pattern research is just one of the areas that holds promising ramifications for the future. The longitudinal design of the Framingham studies as well as the use of multiple generations of cohorts has provided considerable insight into disease risk reduction and obesity prevention.

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2. Millen BE, Pencina M, Kimokoti R, and D'Agostino RB. The Framingham Nutrition Studies Insights into Weight History, Dietary Patterns, Obesity Prevention, and Risk Reduction. National Heart, Lung and Blood Institute. Available at: <http://www.nhlbi.nih.gov/meetings/workshops/predictors/abstracts/millen.htm>. Accessed February 4, 2009.
3. Pencina MJ, Millen BE, Hayes LJ, and D'Agostino RB. Performance of a Method for Identifying the Unique Dietary Patterns of Adult Women and Men: The Framingham Nutrition Studies. *J Am Diet Assoc*. 2008;108:1453-1460.
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ADA Research Committee

The ADA Research Committee has the following two major initiatives for this year: (1) marketing research to dietitians, and (2) developing and disseminating a Research Toolkit. The latter will be the focus of this article. On December 8, 2008, Linda Delahanty, MS, RD presented the

history of the toolkit and how it fits with the Committee's charge on a Webinar. Debra Krummel, PhD, RD demonstrated a prototype of the toolkit. One hundred registrants signed up for the webinar and either participated in it in real time or viewed at a time. Based on

DPG input, the target audience for development of materials in this round is the beginning RD. Future audiences include RDs in advanced practice, interns, and faculty. The goal is to have the Toolkit available by the summer of 2009.

Stay tuned for the unveiling of the Research Toolkit

FNCE News – Research Lectures

By Inés M. Anchondo and Melanie Mott

At FNCE 2008, the Research DPG planned two sessions. The first education session had two presentations, with the first titled “Phytochemical for Cancer Prevention” presented by Dr. Emily Ho of the Department of Nutrition and Exercise Sciences and the Linus Pauling Institute at Oregon State University. The second speaker, Dr. John Milner from the Division Cancer Prevention of the National Cancer Institute, presented “Phytochemicals and Cancer Prevention: Translating Evidence for Future Practice”.

Dr. Ho began by talking about the causes of cancer. It is estimated that diet accounts for approximately 35% of cancer. This is higher than both smoking (30%) and infection (20%). The incidence of cancer has increased due to physical inactivity and poor food choices amongst genetically susceptible individuals. For instance, Dr. Ho described that a clear dose-response rate exists amongst individuals exposed to the Western lifestyle. Individuals who have lived in China their entire life have a rate of 1.8 per 100,000 individuals of prostate cancer, Chinese born individuals who have lived in the US for 5-10 years have a rate of 23 per 100,000 individuals of prostate cancer, and US born Chinese have a rate of 37 per 100,000 individuals¹.

This dose-response trend could be influenced by the fact that 75% of Americans are not meeting the recommendation of five or more fruits and vegetables per day². Foods such as fruits and vegetables are rich in substances important for health such as fiber, vitamins and minerals, antioxidant nutrients, and phytochemicals; phytochemicals are defined as non-nutritive substances

with disease-protecting abilities. More than 900 phytochemicals have been identified in foods. In fact, one serving of vegetables may contain more than 100 different phytochemicals. Dr. Ho discussed that taking supplements with phytochemicals may not be beneficial since there is no or little regulation of the supplement industry, especially with regard to safety and efficacy, and the phytochemical content may vary considerably among supplements.

Phytochemicals help prevent cancer by affecting several of the stages of cancer development. In addition, phytochemicals act as antioxidants and hormone regulators, which can help repair cells and decrease the effects of aging. Increasing intake of foods high in phytochemicals can help prevent cancer. For example, broccoli contains fiber, folate, antioxidant nutrients, and the phytochemicals glucosinolates and isothiocyanates. However, the amount of the glucosinolates varies in broccoli depending on the variety and cultivation, stress, production conditions, type of farming (organic vs. conventional), and soil conditions. The amount of isothiocyanates varies depending on chewing (releases the enzyme myrosinase, which allows isothiocyanates to be released), cutting, cooking (destroys myrosinase, so isothiocyanates can not be released), and gut bacteria. Thus, all these factors play a key role in the dose response effect of phytochemicals and cancer prevention. Dr. Ho concluded her presentation by discussing that while overall there appears to be an inverse relationship between cruciferous vegetable intake and decreased cancer risk, individual genetic

polymorphisms can lead to different responses amongst people.

Dr. John Milner also began with an overview of cancer cases and causes. He explained that by 2020, cancer will be the cause of death for an estimated 10.3 million people per year unless we begin to consider preventive measures more seriously³. There is a recognized link between diet and cancer prevention. However, there are no definite conclusions about this relationship. For instance, when examining 17 cohort studies that compared the highest and lowest intakes of non-starchy vegetables and the link between colon cancer, eleven exhibited a trend toward a reduction in colon cancer with higher intakes of non-starchy vegetables. However, it is important to note that only three studies were statistically significant.

Phytochemicals have been recognized for blocking free radicals formation and preventing cell damage. However, the phytochemical content of fruits and vegetables varies markedly making it difficult to determine a specific dose-response effect between these foods and cancer risk⁴. In fact, some evidence suggests that the benefits of increasing intake of plant based foods may come from the impact on energy intake and metabolism. That is, higher energy content foods have greater carcinogenic activity than fruits, vegetables, whole grains, and soy foods, which happen to be higher in phytochemicals. In addition, Dr. Milner explained that it is possible that some foods may “minimize the deleterious effect of excess energy” intake. For example, in rats fed a high fat diet, eating black pepper (with active ingredient piperine) decreased

reactive and oxidative substances brought about by the excessive calorie and fat intake⁵. Nevertheless, Dr. Milner stressed the importance of the individual response explaining that “part of the confusion about the importance of diet arises from trying to use population information to predict individual responses.” For example, in the case of calcium and colorectal cancer, most studies have shown that supplementing calcium may decrease risk of colorectal cancer. However, individual genetic information may show who needs more supplementation given their specific genotype⁶. Also, in the case of breast cancer and soy intake, studies have shown that supplementation may be more beneficial for western Women than Asian women given their specific genotype.

Dr. Milner also explained that foods can also lead to an epigenetic modification, which is a genetic modification in DNA (by a genotoxic agent), causing the protein product to be non-functional. An epigenetic modification does not actually change the sequence of the DNA, instead it changes how the gene is expressed. Furthermore, epigenetic modifications are reversible. An example of this is how folate reverses hyperhomocysteinemia by influencing the epigenetic control of the gene expression.

In the end, Dr. Milner emphasized that dietary interventions may not always be protective against cancer. However, there are general recommendations that we can follow to reduce our risk of developing cancer:

1. Be as lean as possible without being underweight
2. Be physically active
3. Avoid sugary drinks
4. Eat more of a variety of vegetables, fruits, whole grains, and legumes
5. Limit consumption of red meats
6. If consume alcohol do so in moderation
7. Limit consumption of salty foods
8. Do not use supplements to protect against cancer

The second session was entitled “Dietary Fructose in Obesity and Hepatic Disease: Culprit or Scapegoat?” presented by Jean-Marc Schwarz, PhD from Touro University and University of California San Francisco and “Dietary Fructose Intolerance – A Cause or Culprit” presented by Dr. Rao Satish from the University of Iowa Carver College of Medicine.

Dr. Schwarz presented that fructose, as part of high fructose corn syrup (HFCS), consumption has increased significantly in the last few decades. This increase in fructose intake parallels the increase in obesity prevalence in the U.S. suggesting that increased “fructose intake may play a significant role in the obesity epidemic,”⁷ although the type of sweetener may be not the problem. The issue may be that we as a society our consuming more sweetened foods and beverages.

Fructose is metabolized primarily in the liver, Dr. Schwarz explained, where it can be converted into glucose and be released for energy, stored as glycogen, or released to take part in the glycolytic pathway (through which fructose is metabolized much faster than

glucose). Large intakes of fructose can overwhelm the liver with the two-carbon unit acetyl Co-A (the building block for fatty acid synthesis). This process is known as de novo lipogenesis (DNL). Animal studies have shown that with large intakes fructose can be converted to fatty acids “at much higher rates than glucose.”⁸ And, many recent molecular studies suggest that there is “an important role for DNL in balancing fat storage and utilization in different tissues.”⁹ Thus, this process of producing fatty acids at a fast rate may be “triggered by [excess] fructose intake” and the process of fructose metabolism in the liver.

Although the specific consequences of the increased fatty acid production from a large intake of fructose are unknown, several metabolic short term effects have been identified when fructose is not supplied in the form of fruit or other unprocessed item:“ 1) worsening of lipid profile and increased VLDL production and higher triglycerides, 2) reduction of long chain fatty acid hepatic oxidation, 3) hepatic fat accumulation potentially leading to non-alcoholic fatty liver disease, 4) hepatic insulin resistance associated with non-alcoholic fatty liver disease (NAFLD)” 5) and possibly worsening of blood glucose control.

Dr. Schwarz concluded that large intakes of fructose may be “the culprit for worsening hepatic metabolism” but more studies are needed to confirm that long-term large intake of fructose is also the culprit for the obesity epidemic.

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FNCE News – Research Lectures

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In contrast, Dr. Rao presented the topic from the perspective of understanding fructose intolerance and its role in health and disease. While fructose intolerance is rare, affecting 1:20,000 people, Dr. Rao discussed that fructose intolerance should be considered in individuals with unexplained gastrointestinal problems. For instance, in an early study of 219 patients Dr. Rao and colleagues conducted in 1998 and 1999, the prevalence of fructose intolerance among patients with unexplained GI symptoms was found to be common among adult patients but this could have occurred because study participants were selected from a tertiary care center.

Next, Dr. Rao and colleagues conducted a double blind, randomized, dose response study in healthy individuals. Results showed that fructose absorption was dose dependent but not concentration dependent and people maybe intolerant without symptoms¹⁰.

In another study Dr. Rao and colleagues studied irritable bowel syndrome (IBS) and fructose intolerance. IBS affects 15% of the US population and the role of fructose intolerance in IBS has not been clarified. This study concluded that IBS symptoms improve following a fructose restricted diet¹¹.

Once the speakers were done presenting, a lively discussion ensued amongst the audience members. Most of the discussion centered on the potential health concerns of consuming high fructose corn syrup (HFCS). Again the speakers reiterated that the long-term impacts of ingesting HFCS are unknown, and

there is no conclusive evidence that HFCS is contributing to the obesity epidemic. They discussed that part of the problem they are seeing is that fructose, in the form of HFCS, is increasing in our food supply. Fructose absorption occurs by way of facilitated transport via GLUT5 and GLUT5 transfer rate appears to become saturated at low levels. When fructose is ingested along with glucose, an individual's fructose tolerance increases 10. Since glucose is not often added to processed foods along with fructose, the speakers have said they have seen an increase in fructose intolerance in their patients. Furthermore, the speakers emphasized that fructose itself is not bad; we should just try to limit consumption to the natural forms such as what is found in fruit.

In December 2008, the American Dietetic Association created a Hot Topics Fact Sheet about High Fructose Corn Syrup (HFCS)¹². Regarding the relationship between HFCS and obesity, the fact sheet reiterated the American Medical Association's (AMA) claim that HFCS is "nutritionally equivalent" to sucrose (table sugar) and it is not metabolized much differently than sucrose. Therefore, it does "not appear to contribute to obesity more than other caloric sweeteners." However, the AMA does recommend limiting the intake of caloric sweeteners to no more than 32 grams per day (based on a 2000 calorie diet). As an increased intake of foods and beverages with added sugars in any form is correlated with an increased intake of total calories, which can contribute to weight gain.

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ADA Member Benefits

By joining the nation's largest organization of food and nutrition professionals, ADA members gain access to a wide array of benefits, including professional publications, networking opportunities, and professional development resources, among many others. As a member of a dietetic practice group (DPG), you're well aware of at least one major benefit of ADA membership, but there are dozens of others—with new ones every year—that you might not know about. Of course, ADA wants you to take full advantage of all the opportunities that membership provides. Below is a listing of some of the newer resources ADA provides for its members, as well as those of particular interest to DPG members, accompanied by brief descriptions of their function. Please feel free to share this list with your colleagues.

For a more extensive list of benefits, visit the members-only section of ADA's Web site at www.eatright.org or call the Member Service Center at 800/877-1500, ext 5000, Monday through Friday, 8:00 am to 5:00 pm Central Standard Time.

Member Interest Groups (MIGs): Member Interest Groups are groups of ADA members who have a common interest. Unlike dietetic practice groups or affiliates, member interest groups focus on areas other than the practice of dietetics or geographic location. As divisions of the national organization, MIGs reflect the many characteristics of ADA's membership and the public it serves. In 2008, the National Organization of Blacks in Dietetics and Nutrition (NOBIDAN), the National Organization of Men in

Nutrition (NOMIN), and Chinese Americans in Dietetics and Nutrition (CADN) joined Latinos and Hispanics in Dietetics and Nutrition (LAHIDAN), and in 2009, a new MIG will work to meet the needs of ADA members 50 years of age and older, as the number of MIGs continues to grow.

Registered Dietitian Day:

Registered Dietitian Day was created by the American Dietetic Association to increase the awareness of registered dietitians as the indispensable providers of food and nutrition services and to recognize RDs for their commitment to helping people enjoy healthy lives. Registered Dietitian Day promotes ADA and RDs to the public and the media as the most valuable and credible source of timely, scientifically-based food and nutrition information. The next Registered Dietitian Day is March 11, 2009. Find out how you can participate at http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/NNM_2007_landing_14219_ENU_HTML.htm.

National Nutrition Month

Materials: National Nutrition Month (NNM) is an annual nutrition education and information campaign created by ADA that's designed to focus attention on the importance of making informed food choices and developing sound eating and physical activity habits. ADA provides dietetics professionals with access to a wide variety of supporting materials to help convey this important message, including fact sheets, flyers, classroom guides and games, recipes, press releases, and event ideas. Visit the NNM homepage at www.eatright.org/nnm.

MNT Works Marketing Kit: This powerful promotional tool provides food and nutrition professionals with the marketing materials necessary to influence medical nutrition therapy (MNT) coverage patterns and persuade insurers, physicians, and other health care professionals that MNT works. The kit includes information on MNT return on investment, frequently used codes for nutrition services, MNT coverage guidelines, experiences with MNT, and a backgrounder on the role of the RD. The kit can be found on the Medical Nutrition Therapy page under the Advocacy & the Profession tab on www.eatright.org.

Consumer Education Campaigns:

ADA launches consumer education campaigns in conjunction with corporate sponsors that expand the message that RDs are the indispensable food and nutrition experts.

Center for Professional

Development: In addition to many continuing education opportunities at the annual Food & Nutrition Conference & Expo, the Center for Professional Development offers conferences, workshops, meetings, lectures, live phone teleseminars and Webinars, Webcasts, CD-ROM and online courses, and audiotapes. Learn more at <http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/education.html>.

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ADA Member Benefits

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Leadership Institute: ADA's Leadership Institute is an integrated, intensive, multiformat training program in the theory and practice of leadership in dietetics. The purpose of the program is to enhance the leadership competencies of ADA members both conceptually and interpersonally, through a combination of information, skill development, and practice-based educational experiences. For more information, visit http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/14606_ENU_HTML.htm.

Policy Initiatives and Advocacy: ADA works within the government to assure that the best interests of dietetics professionals are met. Government policy and legislation has a profound effect on the dietetics field, particularly in recent years. ADA makes a special effort to keep an eye on law changes, client liability, and other legal issues so members can focus on serving their clients. It also provides opportunities for member voices to be heard on a national level. For more information, visit <http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/advocacy.html>.

On the Pulse: More government-focused than ADA's Daily News, On the Pulse is a weekly e-mail newsletter on ADA's legislative and regulatory priorities. It also addresses reimbursement, science, and practice-related matters. Sign up by going to ADA's member-only Web site at www.eatright.org and clicking on the "Journal/Publications" link and then selecting *On the Pulse*.

Daily News: A key resource for keeping abreast of the top news stories concerning dietetics and the profession, ADA's *Daily News* is delivered via e-mail every weekday morning and is a brief review of the nation's leading food, nutrition, and health headlines. The e-mail format allows members to click on Web links to the actual articles and the handy newsletter can be saved for later review. Sign up by going to ADA's member-only Web site and clicking on the "Journal/Publications" link.

Nationwide Nutrition Network: Free to members, ADA's Nationwide Nutrition Network (NNN) enables practitioners to market their services through this online referral network. NNN connects members to potential clients such as consumers, businesses, and other colleagues and allows members to list information about their practice and specialization. To obtain an enrollment form, e-mail membrshp@eatright.org and include your name and member number. For more information, visit http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/home_17304_ENU_HTML.htm.

ADACareerLink: ADA's online job service (www.adacareerlink.org). Functionality includes posting résumés, targeting searches by specialty and geographic location, respond directly to job listings, and receive e-mail alerts about new positions. For a fee, member employers can also recruit professionals. Find more information under the Careers & Students tab at www.eatright.org.

Interactive Salary Worksheet: Members can determine fair market value for their services by accessing the interactive salary calculator available in the Career Advancement section of the ADA Web site at http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/career_11495_ENU_HTML.htm. This salary calculation worksheet

is based on a statistical model developed with data from ADA's *Compensation and Benefits Survey of the Dietetics Profession 2007*, offers a rough idea of what professionals with similar characteristics and in similar situations earn, on average. It also provides a sense of the relative importance of each factor in predicting salaries.

Hot Topics: Hot Topics are timely, one-page responses to members' questions and issues that have a significant impact on consumer health. Responses are written in consumer-friendly language and are designed to clarify a controversy or debunk a nutrition myth. Some current hot topics address *trans* fats, avian flu, and the glycemic index, with more to come according to member requests. Find the current list of Hot Topics at http://www.eatright.org/cps/rde/xchg/ada/hs.xsl/nutrition_7335_ENU_HTML.htm.

Free Online Journal Continuing Professional Education (CPE): As of January 2008, members can easily earn up to 4 free continuing professional education credits in each issue of the *Journal* by completing CPE quizzes online at www.eatright.org. By logging into ADA's Online Business Center and clicking the "Journal Article Quiz" button on their personal Profile Page, members can view a list of *Journal* CPE quizzes they've already completed and those still available to complete for credit. Quizzes are scored automatically online, and once all questions are answered correctly, CPE credit for completed quizzes may be added directly to a member's Professional Development Portfolio.

Excellence in Research Award Winners

FNCE 2008

Award Winners

Congratulations to **Kelly A. Tappenden PhD, RD** for her outstanding work in dietetics and nutrition research. She is the Associate Dean, Graduate College and Associate Professor of Nutrition and Gastrointestinal Physiology at the University of Illinois at Urbana-Champaign.

Student Research Award Winners at FNCE 2008

Winners included:

Celia Struble with her abstract titled "Adults food insecurity is associated with poorer perceived health of rural impoverished women participating in a produce pilot study in Appalachian, Ohio". She is from the School of Human and Consumer Sciences, Ohio University, Athens, OH; her advisor is David Holben.

Emma Bah-Rey with her abstract titled "Adult food insecurity is inversely associated with diabetes risk and produce intake and behaviors of women living on a Navajo reservation in Arizona". She is from the School of Human and Consumer Sciences, Ohio University, Athens, OH; her advisor is David Holben.

Maura Bruno MS, RD, CDE with her abstract titled "The impact of a workplace wellness intervention on chronic disease factors". She is from School of Health Related Professions, University of Medicine and Dentistry of NJ, Newark, NJ; her advisor is Riva Touger-Decker.

Dr. Susan Benson-Davis MPH, RD, LD with her abstract titled "Demographic characteristics and weight change in adult Roux-en-Y gastric bypass patients during the first six months postoperative". She is from School of Health Related Professions, University of Medicine and Dentistry of NJ, Newark, NJ; her advisor is Laura Byham-Gray.

ResearchDPG@googlegroups.com is the official RDPG electronic mailing list. It is restricted to current RDPG members and is an official communication of the American Dietetic Association. NUTRINET is an EML for any dietitian or nutrition expert working in research. NUTRINET is not owned by the Research Dietetic Practice Group or ADA. Membership is not restricted. To subscribe to NUTRINET send an email to *listserv@list.uiowa.edu* and fill out the registration form.

The Effects of Daily Green Tea Intake on Select Metabolic Factors in Overweight Breast Cancer Survivors

Nicole R Stendell-Hollis MS, RD; graduate student at the University of Arizona

Regular green tea consumption may be protective against overweight and obesity as well as reduce the risk of cardiovascular disease and oxidative stress possibly due to its anti-proliferative, anti-inflammatory and anti-diabetic properties¹⁻⁵. Mechanisms by which green tea may modulate body weight include: induction of carbohydrate malabsorption; downregulation of fatty acid synthase and pancreatic and gastric lipase; stimulation of thermogenesis, sympathetic nervous system activity, and lipolysis; reduction of adipocyte differentiation; and modification of the satiety response⁶⁻¹². Overweight and obesity are common among women treated for breast cancer¹³ and its related co-morbidities results in a poorer prognosis for both pre- and post-menopausal breast cancer survivors^{14,15}.

Thirty-nine overweight breast cancer survivors (57.1±8.2 years) completed this randomized, double-blind, placebo-controlled intervention study. We tested the hypothesis that daily green tea consumption as compared to placebo tea consumption would result in significant reductions in body weight and improvements in select metabolic parameters. Participants drank either 4 cups of decaffeinated green tea or placebo tea daily for 6 months and had a mean body weight of 80.2 kg; BMI of 30.1 kg/m²; and body fat of 46.4%. Average tea intake was 24.8 ± 4.9 tea bags/week. The daily consumption of green tea was associated with a significant reduction in energy intake (P =0.02) and a non-significant mean change in body weight of -1.2 kg (green

tea) versus +0.2 kg (placebo). Green tea improved HDL levels over time (P=0.003) and also reduced fasting insulin levels compared to placebo tea (p=0.05) with clinically significant differences in HOMA-IR (-1.1±5.9 green tea; +3.2±7.2 placebo, p=0.07). Green tea intake for 6 months resulted in significant improvements in HDL and glucose homeostasis in overweight breast cancer survivors, and although it did not result in significant reductions in body weight it is suggestive of a protective effect.

One limitation of this study is that we did not control for the consumption of green tea with or without food and this may have affected the absorption of the green tea catechins¹⁶. Concentrated green tea extracts delivered in a fasted state may have resulted in greater efficacy. A further limitation of this study may have been the use of decaffeinated green tea beverage which although is advisable for breast cancer patients who commonly present with breast pain or fibrocystic breast disease¹⁷, it may have compromised the efficacy of the intervention to positively change body weight. While this study did not show overall significant improvements in body weight with green tea intake as compared to placebo tea, it is suggestive of favorable changes in body weight and did demonstrate significant improvements in blood lipid profiles and HOMA. Drinking green tea daily may be a potentially effective adjuvant to various metabolic-related diseases especially in combination with an energy-restricted diet and increased physical activity.

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Treasurer Report

Hello Research DPG Members,

Our budget for the year allows for \$20,825 of income and \$23,805 in expenses. The fiscal year is from June to May. As of the time this report was generated, we were almost half of the way through our year with \$2541 in income and \$3755 in expenses. This includes the loss of \$4013 from our reserve investments. It is expected that most of that loss will be recovered as the market bounces back from its current decline. Not all of the bills for FNCE 2008 had been paid by the end of October. Due to the economy, our reserves have been reduced a little, but we are still have solid financial footing.

Val Episcopo, MA RD
RDPG Treasurer

10. Diepvens K, Westerterp KR, Westerterp-Plantenga MS. Obesity and thermogenesis related to the consumption of caffeine, ephedrine, capsaicin, and green tea. *Am J Physiol Regul Integr Comp Physiol* 292, R77-85, 2007.
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Research DPG 2008-09 Budget

		Annual Budget	As of September
Revenue	Membership	17825	6554
	Grants	3000	0
	Investment	<u>0</u>	<u>-4013</u>
		20825	2541
Expenses	Publications	0	30
	Lodging	4300	0
	Transportation	5200	0
	Postage	800	0
	Mailing Service	200	0
	Office Supplies	25	0
	Teleconferences	450	37
	Awards	600	0
	Audio Visual	150	0
	Food Service	3000	3688
	Printing	5000	0
Other	<u>4080</u>	<u>0</u>	
		23805	3755
	Net	-2980	-1214
	June 08 Reserve	18202	18202
		<u>-2980</u>	<u>3316</u>
	Reserve	15222	21518

Nutrition & Health CONFERENCE - 2009

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- Andrew Weil, MD, "Macronutrients and the Anti-Inflammatory Diet"
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- David Heber, MD, PhD on phytonutrients and nutrigenomics
- David Katz, MD, MPH on obesity
- Nutrition & cancer panel featuring Donald Abrams, MD, Keith Block, MD, and Cyndi Thomson, PhD

To register, visit www.NHConference.org/register



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eat right. American Dietetic Association

National Nutrition Month® is a nutrition education campaign created by the American Dietetic Association. Eat Right, the 2009 theme, supports and promotes ADA's new Organizational Identity and encourages consumers to make informed food choices. For a listing of creative event ideas, promotional materials and products, visit www.eatright.org/nmm.



National Nutrition Month

March® 2009

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The RDPG Newsletter Editors are calling for articles to capture the diversity of the research of our members. The main article is approximately 2000 words (not including tables/graphs). Other articles are usually 1000-1500 words; "Student Notes" should be about 500 words.

Submission deadlines are as follows:

Summer issue: April 30, 2009

Fall issue: July 15, 2009

Winter issue: September 15, 2009

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