SCAN'S PULSE

A Publication for Sports, Cardiovascular, and Wellness Nutritionists

Summer 2008
Vol. 27, No. 3

CONTENTS

A Model for Nutrition Education for Use with Female Collegiate Athletes 1

From the Editor 3

CPE article—Not All Dieting Is Bad: The Relationship Between Dieting and Eating Pathology 5

Dietary Guidance to Prevent Cancer: A Commentary on "Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective" 9

From the Chair 11

Conference Highlights 12

Reviews 16

Sports Dietetics USA Research Digest 18

SCAN Notables 20

Of Further Interest 22

Upcoming Events 24

A Dietetic Practice Group of American Dietetic Association
www.eatright.org | Your link to nutrition and health™

A Model for Nutrition Education for Use with Female Collegiate Athletes

by Avital Pato Benari, MS, RD, and Paula A. Quatromoni, DSc, MS, RD

It has long been recognized that sound nutrition practices are a fundamental component of every athlete's training program,[1-4] but misinformation abounds. Student athletes are a unique population, having the dual demands of both academic and athletic performance.[5] Good nutrition can help them achieve success in both domains. Proper nutrition leads to peak performance, whereas suboptimal eating practices can compromise performance, delay recovery, and contribute to injury.[6] Other evidence demonstrates that cognitive performance is boosted by consumption of breakfast[7] and healthful snacks.[8]

Athletes seek nutrition advice from various sources including magazines, television, the Internet, peers, coaches, trainers, nutritionists, and other specialists.[5,9-11] Since many of these sources can be unreliable, athletes are at risk of succumbing to inadequate or unhealthy dietary practices. Factors that include performance expectations and sport-specific and social influences may encourage athletes to experiment with fad diets and nutritional supplements in the hopes of achieving a competitive edge or a desired body weight.[12] Female athletes are particularly vulnerable to these as well as other risks.[6,13,14]

Although nutrition education is advocated for female athletes, only a few studies have involved collegiate athletes.[15] Most educational interventions have not been successful at helping athletes adopt healthier eating habits, perhaps because of a lack of understanding about the specific nutritional needs, attitudes, values, and beliefs of athletes.[12] The purpose of this study was to determine what female collegiate athletes perceive as their needs and desires for effective nutrition interventions.

Research Methods

Six female student-athlete members of a National Collegiate Athletic Association (NCAA) Division 1 rowing team volunteered to participate in this study. Women crew members are relatively frequent users of nutrition services on our campus.[16] They were selected for this pilot study because their interests in nutrition were not limited solely to weight control, but rather included a genuine interest in nutrition education for athletic performance and overall wellness. Research protocols were approved by the Boston University Institutional Review Board in the School of Education. Because research

ADA Dietetic Practice Group of Sports, Cardiovascular, and Wellness Nutritionists (SCAN)

SCAN Web site: http://www.scandpg.org

SCAN Office
Pamela Cramer, CAE, Executive Director
800/249-2875 or 847/441-7200
pcramer@thepmcgroup.com

Chair
Hope Barkoukis, PhD, RD
Brecksville, OH
216/368-2441
Hope.Barkoukis@case.edu

Chair-Elect
Gale Welter, MS, RD, CSSD, CSCS
Tucson, AZ
520/621-4550
welterg@comcast.net

Past Chair
Roberta Anding, MS, RD, CSSD, CDE
Houston, TX
832/822-4005
randing@houstontexans.com

Treasurer
Richard E. Hall II, MS, RD
Anthem, AZ
602/284-4607
Rick.hall@asu.edu

Secretary
Kelly White, MS, RD
Starkville, MS
kwhite@och.org

Partnerships Co-Directors
Julie Upton, MS, RD
Tiburon, CA
917/863-9152
julieupton@gmail.com

Jenna Bell-Wilson, PhD, RD, CSSD
Arlington, MA
781/777-2799
jennabw@gmail.com

Member Services Director
Tara Coghlin Dickson, MS, RD, CSSD
Mill Valley, CA
650/723-5094
Tara.dickson@chw.edu

Continuing Education Director
Pamela Nisevich, MS, RD
Beavercreek, OH
937/641-3434
Pamela.nisevich@hotmail.org

Public Relations Director
(to be appointed)

Sports Dietetics USA Director
Michele Macedonio, MS, RD, CSSD
Loveland, OH
513/683-1405
M_A_Macedonio@fuse.net

2008 Symposium Chair
Enette Larson-Meyer, PhD, MS, RD, CSSD
Laramie, WY
307/766-4378
Enette@uwyo.edu

PULSE Editor-in-Chief
Mark Kern, PhD, RD, CSSD
San Diego, CA
619/594-1834
kern@mail.sdsu.edu

ADA Practice Manager
Frances Austin, RD
120 South Riverside Plaza, Suite 2000
Chicago, IL 60606-6995
800/877-1600 ext. 4813
312/899-4812 – f
faustin@eatright.org

involving the athletes' perspectives on nutrition education is novel and not well described in the literature, qualitative research methods were used in this pilot study.

Private interviews, using a scripted discussion guide, were conducted with each of the six female crew athletes. The interviewer was not the sports nutritionist who provides nutrition services on campus; all interviews were conducted by a neutral person who was unknown to the athletes. Each interview lasted 20 to 50 minutes, was digitally recorded, and later transcribed. Discussion topics queried athletes' perceptions of need for nutrition education services, sources of nutrition information, influences on personal nutrition behavior, beliefs about nutrition and performance, and recommendations for effective nutrition interventions. Participants were given the opportunity to ask questions and contribute additional commentary. All participants agreed to follow-up contact.

Interview transcripts were analyzed using grounded theory methodologies.[17] Because the primary purpose of grounded theory is to generate an explanatory model of human behavior that emerges from qualitative data, this approach was well-suited to the goals of this exploratory research. Participant responses were coded to identify underlying themes and common patterns using established methods for qualitative research.[17] The analysis moved inductively from theoretical grounded transcriptions towards theme development to characterize behavioral patterns, belief systems, and unmet needs conveyed by study participants in response to the discussion topics presented.

The first step in the analysis involved "open coding," in which participants' statements, descriptions, and ideas were grouped into codes representing common themes embedded in the interview transcripts. For example, when multiple participants described the cost of food as a major determinant of their food choices, the code assigned was "budget."

The next step involved "axial coding," which grouped together open codes that shared a similar conceptual meaning. For example, when several athletes identified relatives, athletic trainers, and sport psychologists as salient and reliable sources of nutrition information, the code of "trustworthy advisor" was assigned.

The final analytical step involved "selective coding," in which codes were clustered and mapped to reveal three main theoretical constructs: Understand Me, Gain My Trust, and Interact with Me. In this way, the analytical process moved inductively from the "grounded" transcriptions towards theme development.

Defining the Model

The three main themes were then used to generate a model for planning and delivering nutrition education interventions for female collegiate athletes (see figure). The components of our dynamic model—Understand Me, Gain My Trust, and Interact with Me—are closely interrelated.

Understand Me. This component of our model refers to the athletes' basic need to have nutrition providers understand fully who they are—as individuals, as athletes in their specific sport, and as college-age women with the unique demands, stressors and realities associated with those multiple roles.

Figure. Theoretical Model of Nutrition Education Needs of Female Collegiate Athletes



The Understand Me construct speaks to the importance of a thorough needs assessment before delivering an intervention. In our study, this theme emerged from three subcategories: 1) specific needs; 2) inhibiting factors, and 3) life experiences. Dietitians must understand the unique sport-specific and position- or event-specific needs of an individual athlete that distinguish her from both the "average female" and the "average female-athlete." For example, appropriate interpretation of body mass index data and energy requirements for student-athletes is essential, because guidelines for the general population do not readily apply to competitive athletes.[18] Several athletes voiced this specific concern, as reflected in the following comment:

"When... sports nutritionists talk to us... they say "for the average female who weighs 130 pounds, this is how many calories she needs." What? That's of absolutely no relevance to me. I weigh 170 pounds. Like, that's really great. That's not me. So make sure that it [nutrition advice] is relevant to the team or to the individual."

Insights into individualized sport requirements, training regimens in-season and off-season, performance expectations, values and belief systems, personal food rituals, and practice commitments that interfere with daily eating routines are crucial to understanding the individual athlete. As illustrated in the participant comment below, this kind of insight allows the nutritionist to support the athlete who has become empowered to link nutritious pre-game food choices with good performance; it also provides the opportunity for clarification and guidance if the athlete's rituals are dangerous or if belief systems are faulty.

"The day before a race, I want to have rice because before I raced at the New England championships I had rice and I had a really good race and I don't know if it affected [the outcome], but it makes me believe that I can affect it."

FROM THE EDITOR

Please Do Not Read This

Stop right now! You can come back to read my letter later if you want, but right now you should be reading our feature articles and the contributions in our usual departments, because that's where the real scoops lie. In case you're like most SCAN members and not easily swayed by the opinions of one person, I'll go ahead and describe what you're missing.

First, right now you could be earning a free continuing professional education unit (CPEU) by reading the article that was masterfully crafted by Hollie Raynor, PhD, MS, RD, and then answering a few questions about whether dieting is likely to develop into a pathology. You'll also find that Norman Hord, PhD, MPH, RD, has provided an excellent commentary on the recent "Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective." I'm still surprised by some of what he discusses.

Our cover article is a special treat. This original research article, written by Avital Pato Benari, MS, RD, and Paula A. Quatromoni, DSc, MS, RD, describes a model that they developed for educating female collegiate athletes.

Elsewhere in this issue—in our "Conference Highlights"—we have provided summaries of just a few of the many presentations that captured attendees' interest at the recent SCAN Symposium. Here you'll also find a report on a fascinating conference sponsored by Tufts University. And don't forget to peruse our latest resource reviews, check out the research digest contributed by Sports Dietetics-USA (SD-USA), and read about the notable accomplishments of our members.

I'm guessing that you're wishing you'd gone right to the heart of things, but if you didn't and you started with this letter, hopefully this has whetted your appetite and you're ready to read on.

Mark Kern, PhD, RD, CSSD
Editor-in-Chief

Inhibiting factors that prevent even well-informed athletes from eating well need to be understood by the nutritionist. These factors include limited time, lack of cooking skills, and limited financial resources that frequently determine food choice and consumption, as noted consistently in other research.[11,19]

Finally, student-athletes want nutritionists to understand their life experiences and key factors that influence their eating behaviors. Parents, roommates, teammates, coaches, trainers, cultural backgrounds, food preferences, values, and personal belief systems were described as central components of the athletes' life experiences that need to be understood to maximize effective interventions.

Gain My Trust. This construct reflects the fact that athletes are often skeptical of nutrition information that comes from sources outside of their immediate sport environment or social network. Thus, the Gain My Trust theme illuminates the highly valued role of trustworthy individuals and sources of nutrition information from persons who interact daily with athletes. Advice is considered valuable and meaningful if it is trusted.

Our participants identified family members, sport psychologists, and

their trainers and coaches as trusted individuals. These persons are considered trustworthy because they are known by the athlete, they are accessible on a regular basis, and they understand the athlete in her sport and show concern. The following comment illustrates this:

"If the strength coach is there...I mean, personally I think of my strength coach as somebody who has always been concerned with health, nutrition, proper diet, proper rest, recovery... So if I have a quick question about something, you know, I might be inclined to ask him, rather than seeking out an appointment with someone else who's not a part of my daily schedule."

For a nutritionist to have a similar impact, he or she must earn the athlete's trust, express empathy, and be easily accessible. Only one other study noted trust as an essential factor for delivering nutrition interventions to competitive athletes.[20] In the Gain My Trust theme, daily or weekly contact that is convenient and unstructured appears central to trust.

Interact with Me. This component of the model characterizes the desire of athletes to have relevant, meaningful, and ongoing working relationships with nutrition providers. This directive challenges nutrition professionals to provide dynamic and engaging educational sessions with student-athletes using creative combinations of group and individual strategies. Consider this comment from one participant:

"It can't really be a lecture, because if you give a lecture you're once again being told what to do and you're not allowed to, like, ask questions about why you should do it and, you know…like just a conversation between two people while cooking…I don't want somebody to tell me how to eat. I want to have a dialogue about why I should eat it and how it can help me."

Summarizing the Results

In short, we found that nutrition education services for student athletes should be interactive, be built on open communication, address individual and team goals, incorporate specific activities, and allow for follow-up.

Athletes want practical information that will teach them how nutrition can maximize and enhance their performance. Interactions that are skills-based and help athletes overcome barriers to healthy eating such as cooking demonstrations and budget-conscious shopping advice are highly valued, even when they are informal and less structured.

Team-based interactions that extend beyond individual services can effectively address team dynamics, group norms, and the sport environment that potentially impact nutrition behaviors and goals. For example, athletes want help in making healthier choices when traveling for competition, including recommendations for making selections from restaurant menus and packing nutritious snacks for long bus rides.



"For a nutritionist to have a similar impact, he or she must earn the athlete's trust, express empathy, and be easily accessible."

Finally, athletes want ongoing follow-up and monitoring. They need evidence that their plan is working or the opportunity to refine their plan if it is not.

Significance of this Model

This work is unique in that it provides the first model for effective nutrition intervention derived from the athletes' perspective. Achterberg & Miller[21] claim that although numerous theories are currently used in nutrition education, none of them can fully predict behavior or behavioral change. While pieces of the evolving theory were previously published, our model is novel in that it depicts dynamic interrelationships between three equally important components: understanding, trust, and interaction. This work is preliminary, limited by its small sample size. The model warrants additional investigation and exploration among larger groups of athletes from diverse sport environments. Nonetheless, our observations reinforce the call to action by Rosenbloom[4] to work to define the best nutrition education approaches to effectively serve athlete populations and lessen the burden of nutritional risk among female athletes.

Avital Pato Benari, MS, RD, is a nutritionist, doctoral student, and instructor in the Department of Curriculum and Teaching at Boston University's School of Education. Paula Quatromoni, DSc, MS, RD, is an assistant professor of nutrition in the Department of Health Sciences and a sports nutritionist at Boston University's Sargent College of Health and Rehabilitation Sciences.

References

1. Short SH, Short WR. Four-year study of university athletes' dietary intake. *J Am Diet Assoc.* 1983;82:632-45.
2. Clark N, Nelson M, Evans W. Nutrition education for elite female runners. *The Physician & Sport Medicine.* 1998;16:124-139.
3. Jacobson BH, Aldana SG. Current nutrition practice and knowledge of varsity athletes. *J Appl Sport Sci Res.* 1992;6:232-238.
4. Rosenbloom CA, Skinner R. College athletes. In: Rosenbloom CA, ed. *Sports Nutrition: A Guide for the Professional Working with Active People.* 3rd ed. Chicago, IL: American Dietetic Association; 2000:283-294.
5. Abood DA, Black DR. Health education prevention for eating disorders among college female athletes. *Am J Health Behav.* 2000;24:209-211.
6. Beals KA, Manore MM. Nutritional status of female athletes with

subclinical eating disorders. *J Am Diet Assoc.* 1998;98:419-425.
7. Kanarek RB, Swinney D. Effects of food snacks on cognitive performance in male college students. *Appetite.* 1990;14:15-27.
8. Murphy JM, Pagano ME, Nachmani J, et al. The relationship of school breakfast to psychosocial and academic functioning. *Arch Pediatr Adol Med*. 1998;152:899–907.
9. Burns RD, Schiller MR, Merrick MA, Wolf KN. Intercollegiate student athlete use of nutritional supplements and the role of athletic trainers and dietitians in nutrition counseling. *J Am Diet Assoc.* 2004;104:246-249.
10. Jacobson B., Sobonya C, Ransone J. Nutrition practice and knowledge of varsity athletes: a follow-up. *J Strength Cond Res.* 2001;15:63-68.
11. Smith-Rockwell M, Nickols-Richardson SM, Thye FW. Nutrition knowledge, opinions, and practices of coaches and athletic trainers at a Division 1 university. *Int J Sport Nutr Exerc Metab*. 2001;11:174-185.
12. Jonnalagadda SS, Rosenbloom CA, Skinner R. Dietary practices, attitudes and physiological status of collegiate freshman football players. *J Strength Cond Res.* 2001;15:507-513.
13. Skinner P, Kopecky L, Seburg S, et al. Development of a medical nutrition therapy protocol for female collegiate athletes. *J Am Diet Assoc.* 2001;101:914-917.
14. Nattiv A. Loucks AB, Manore MM, et al. American College of Sports Medicine. American College of Sports Medicine position stand. The female athlete triad. *Med Sci Sport Exerc.* 2007;39:1867-1882.
15. Abood DA, Black DR, Birnbaum RD. Nutrition education intervention for college female athletes. *J Nutr Educ & Behav.* 2004;36:135-137.
16. Quatromoni PA. Clinical observations from nutrition services in college athletics. *J Am Diet Assoc.* April 2008; in press.
17. Strauss A, Corbin J. Coding procedures. In: Corbin J, Strauss A, eds. *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage; 1990:57-193.
18. Clark NH. Communicating with athletes about nutrition. In: Rosenbloom CA, ed. *Sports Nutrition: A Guide for the Professional Working with Active People.* 3rd ed. Chicago, IL: American Dietetic Association; 2000:245-252.
19. Rosenbloom CA, Jonnalagadda SS, Skinner R. Nutrition knowledge of collegiate athletes in a Division I national collegiate athletic association institution. *J Am Diet Assoc.* 2002;102: 418-420.
20. Robins A, Hetherington MM. A comparison of pre-competition eating patterns in a group of non-elite triathletes. *Inter J Sport Nutr Exerc Metab.* 2005;5;442-457.
21. Achterberg C, Miller C. Is one theory better than another in nutrition education? A viewpoint: More is better. *J Nutr Educ Behav.* 2004;36:40-42.

CPE article:

Not All Dieting Is Bad: The Relationship Between Dieting and Eating Pathology

by Hollie Raynor, PhD, MS, RD

This article is approved by the Commission on Dietetic Registration (CDR) for 1 continuing professional education unit (CPEU), level 1. To apply for ***free*** *CPE credit, obtain a question/answer sheet through one of the following methods: (a) download it from SCAN's Web site (www.scandpg.org), or (b) request it from the SCAN Office via phone: 800/249-2875; fax: 847/556-0352; or email: scanoffice@eatright.org.*

Learning Objectives
After you read this article, you will be able to:
■ Describe the evidence supporting a theorized link between dieting and eating disorder symptoms.
■ Summarize the data from randomized trials examining caloric reduction and eating pathology.
■ Discuss proposed reasons for inconsistent findings from studies on weight loss and disordered eating.

It has been proposed that dieting increases the risk for developing and maintaining eating disorder symptoms.[1-3] According to this hypothesis, dieting—defined as an intentional reduction in energy intake below what is needed to maintain energy balance[4]—produces a shift from reliance on physiologic to cognitive mechanisms to control eating[1,2] (often termed dietary restraint). When cognitive control is disrupted, dieters become vulnerable to eating that is out of control,[1] a key component of binge eating.[5] Once uncontrolled eating (i.e., binge eating) begins, dietary restraint is theorized to increase as a means to offset weight gain, and more severe methods of weight control may emerge. The increased restraint is believed to strengthen the likelihood of recurrent binge eating. The relationship between restraint and binge eating creates the core of the binge-purge cycle outlined in the cognitive behavioral framework of bulimia nervosa developed by Fairburn.[6]

The Relationship Between Dieting and Binge Eating
Two areas of evidence support the theorized causal relationship between dietary restraint and eating disorder pathology. The first area arose from experimental eating laboratory

studies conducted initially by Herman and Mack[7] and later by Polivy and Herman.[8] These studies found that restrained eaters (participants who reported conscious control over their eating for weight control) showed an increase in eating when restraint was overridden (known as counter-regulatory eating or disinhibition). For example, when given a preload high in calories, restrained participants consumed more food ad libitum following the preload in comparison to the amount of food consumed ad libitum when no preload had been consumed. The investigators theorized that the abstinence-violation effect[9] had occurred and that as restraint was violated, dietary restriction was temporarily abandoned, leading to increased consumption. The increased consumption occurring in these situations was considered to be a laboratory simulation of binge eating. However, in these simulations the two markers of binge eating—eating an amount of food that is definitely larger than most people would eat, and exhibiting a sense of loss of control[5]—did not occur; this study limitation has been acknowledged by Polivy and Herman.[1]

The second area of evidence that links dieting and binge eating comes from longitudinal observational studies demonstrating that dieters or adolescent females with elevated dietary restraint were at increased risk for binge eating[10-12] and partial[13,14] as well as full eating disorders.[13] Conclusions from these investigations posit that dieting may be a harmful behavior.[11] Because of the belief that dieting causes eating pathology, some researchers have stated that all dieting should be stopped.[15]

Do Weight Loss Programs with Caloric Limits Produce Binge Eating?

Family-based behavioral pediatric weight control programs produce significant weight loss, approximately 15% to 20% of excess weight.[16] These programs involve modifications to the diet, including a daily caloric goal (1,200 kcals/day) and an emphasis on making dietary choices that improve the nutrient quality of the diet. Such dietary modifications fit the definition of "dieting," because intake falls below energy requirements, producing a negative energy-balance state.

With these types of interventions it might be expected that eating disorder symptoms would increase as children lose weight, due to the increase in dietary restraint required to meet the caloric prescription.



"These studies found that restrained eaters...showed an increase in eating when restraint was overridden."

Several studies have assessed eating pathology in overweight children (aged 7 to 17 years) receiving these behavioral interventions. Although all of these investigations reported significant weight reductions, indicating significant decreases in energy intake, no increases in eating pathology were found.

For example, one study found a significant decrease in eating disorder pathology,[17] and another found no change in pathology[18] at the completion of treatment. Epstein and colleagues[19] followed 8- to 12-year-old children over 2 years, which included 6 months of treatment, and found no change in disordered eating. Braet and Winckel[20] followed children, aged 7 to 17 years, who received approximately 4 months of treatment, over 4 years and observed no change in emotional eating. This study did find that 5 children had an elevated score on the Bulimia subscale of the Eating Disorders Inventory at 4-year follow-up, but 3 of the 5 children with elevated scores had been in the advice-only arm. While these studies did not find increases in eating pathology, it is important to note that they were not designed to test the relationship between dieting and binge eating, but instead were measuring potential changes in eating pathology during participation in a family-based behavioral pediatric weight control intervention.

Randomized Trials on Caloric Reduction and Eating Pathology

To better examine the relationship between objective consistent reductions in energy intake and development of eating disorder symptoms, several randomized trials have involved overweight females,[21,22] non-obese females,[23] and females with full- and sub-threshold bulimia nervosa.[24] Results from all of these studies revealed that significant weight reductions occurred among participants who followed a calorie reduction plan versus control participants who did not follow such a plan. Furthermore, no change or significant reductions in eating pathology occurred in the group receiving the calorie reduction plan compared with the control group.

In one of these trials, Wadden and colleagues[21] examined the influence of different degrees of caloric reduction on development of eating pathology. Obese women were randomly assigned to one of three 40-week interventions: 1) a 1,000 kcal/day diet that included 4 servings/day of a liquid meal replacement for 14 weeks, followed by a 1,200 to 1,500 kcal/day balanced diet consisting of conventional foods (MR); 2) a 1,200 to 1,500 kcal/day balanced diet consisting of conventional foods for 40 weeks (BDD); or 3) a nondieting approach for 40 weeks that discouraged reducing caloric intake and instead encouraged participants to eat every 4 hours, consume whatever foods were desired to eliminate the notion of "bad" foods,

and stop eating when full (ND). Eating disorder symptoms were assessed using the Eating Disorder Examination administered by practitioners blinded to conditions. Dietary restraint, disinhibition, mood, self-esteem, and body image dissatisfaction also were measured.

Results showed that at week 40, significant weight losses occurred in the MR and BDD groups (-11.5% and -8.4%, respectively), but weight loss was not significant in the ND group (-0.8%). Weight loss outcomes also matched changes in dietary restraint, which significantly increased in the MR and BDD groups but not in the ND group. At week 40, no difference was found among the three interventions in objective bulimic episodes (eating episodes meeting the quantity of food consumed and loss of control criteria for binge eating). Additionally, subjective bulimic episodes (episodes not meeting quantity of food consumed criterion, but meeting loss of control criterion for binge eating) and objective overeating episodes (episodes meeting quantity of food consumed criterion but not the loss of control criterion for binge eating) did not change over the course of the study. Moreover, disinhibition, poor self-esteem, and negative body image significantly decreased in all groups (MR, BDD, and ND), with no differences noted. In addition, symptoms of depression significantly declined in the MR and BDD groups, but not in the ND group. Thus, participants receiving the MR and BDD interventions lost a significant amount of weight and significantly improved in eating pathology variables, providing no evidence for a link between dieting that reduces intake enough to produce significant weight loss and development of eating pathology.

Explaining the Mixed Findings

Stice et al[22-25] have proposed several reasons for the inconsistent findings from prospective versus experimental weight loss studies on eating pathology. According to one explanation, the measures of "dieting" and dietary restraint used in the prospective studies do not actually measure an achievement of negative energy balance. Studies examining what self-reported dieting means to adults and adolescent females indicates that "dieting" has many different interpretations (e.g., eating less, increasing fruits and vegetables) to participants,[26,27] and it has long been proposed that the main measures of restraint—the Restraint Scale (RS),[28] the restraint subscale of the Three Factor Eating Questionnaire (TFEQ),[29] and the Dutch Restrained Eating Scale (DRES)[30]—measure different constructs.[31] Furthermore, these tools may not adequately differentiate individuals who are at negative energy balance (as shown by objective weight loss) from individuals who are eating less than they want to eat but have not reduced intake enough to be in negative energy balance, and are thus are in a "perceived deprivation" state—a type of psychological rather than physiological hunger.[32]



"Potentially, unhealthy dietary behaviors (e.g., fasting) may drive the relationship between dieting and eating pathology."[25]

Another explanation for the mixed results is that an unmeasured third variable is responsible for the relationship found in the observational studies.[25] In contrast to observational studies, randomized experiments are better able to rule out third-variable explanations and draw causal relationships between variables, thereby providing the strongest data from which evidence-based practices are developed. Therefore, it has been proposed that the observational studies may be measuring a relationship that begins with overconsumption and leads to "dieting" and the potential onset of eating pathology.[25]

In addition, experimental studies that promote a caloric reduction and consequential weight loss are based on behavioral weight loss interventions that focus on helping participants develop a healthy lifestyle; therefore, the reduction in energy intake is achieved through what are considered to be healthy dietary changes.[16,33] Potentially, unhealthy dietary behaviors (e.g., fasting) may drive the relationship between dieting and eating pathology.[25] Finally, the link between dieting and binge eating may be moderated by age or body weight in such a way that it occurs only in normal-weight adolescent females and not in overweight children or adults.[25]

Summary

Data from randomized trials indicate that providing a calorie goal to help induce a state of negative energy balance and consequential weight loss does not necessarily promote binge eating. In particular, research suggests that for overweight children and adults, reducing energy intake in such a way that can be included and maintained in a healthy lifestyle promotes weight loss and improves some aspects of eating pathology. More research is required to better understand the relationship between "dieting" and binge eating, particularly regarding the moderators and mediators that may be involved in this relationship.

Hollie Raynor, PhD, MS, RD, is a clinical psychologist and an assistant professor of nutrition at the University of Tennessee in Knoxville.

References

1. Polivy J, Herman CP. Dieting and bingeing: A casual analysis. *Am Psychol.* 1985;40:193-201.
2. Spear BA. Does dieting increase the risk for obesity and eating disorders? *J Am Diet Assoc.* 2006;106:523-525.
3. Fairburn CG, Cooper Z, Cooper PJ. The clinical features and maintenance of bulimia nervosa. In: Brownell KD, Foreyt JP, eds. *Handbook of Eating Disorders: Physiology, Psychology, and Treatment of Obesity, Anorexia and Bulimia.* New York, NY: Basic Books; 1986:389-404.
4. National Task Force on the Prevention and Treatment of Obesity. Dieting and the development of eating disorders in overweight and obese adults. *Arch Intern Med.* 2000;160:2581-2589.
5. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders.* 4th ed. Washington, DC: American Psychiatric Association; 1994; pp.545-550.
6. Fairburn CG. *Cognitive-behavioral Therapy for bulimia nervosa.* New York, NY: The Guilford Press; 2002.
7. Herman CP, Mack D. Restrained and unrestrained eating. *J Pers.* 1975;43:647-660.
8. Polivy J, Herman CP. Dieting and its relation to eating disorders. In: Brownell KD, Fairburn CG, eds. *Eating Disorders and Obesity: A Comprehensive Handbook.* New York, NY: Guilford Press; 1995:83-86.
9. Marlatt GA, Gordon JR. *Relapse Prevention: Maintenance Strategies in Addictive Behavior Change.* New York, NY: Guilford; 1985.
10. Stice E, Killen JD, Hayward C, et al. Age of onset for binge eating and purging during adolescence: a four-year survival analysis. *J Abnorm Psychol.* 1998;107:671-675.
11. Neumark-Sztainer D, Wall M, Guo J, et al. Obesity, disordered eating, and eating disorders in a longitudinal study of adolescents: how do dieters fare 5 years later? *J Am Diet Assoc.* 2006;106:559-568.
12. Stice E, Presnell K, Spangler D. Risk factors for binge eating onset: a prospective investigation. *Health Psychol.* 2002;21:131-138.
13. Patton GC, Selzer R, Coffey C, et al. Onset of adolescent eating disorders: Population based cohort study over 3 years. *Brit Med J.* 1999;318:765-768.
14. Killen JD, Taylor CB, Hayward C, et al. Weight concerns influence the development of eating disorders: a 4-year prospective study. *J Consult Clin Psychol.* 1996;64:936-940.
15. Polivy J, Herman CP. Undieting: a program to help people stop dieting. *Int J Eat Disord.* 1992;11:261-268.
16. Goldfield GS, Raynor HA, Epstein LH. Treatment of pediatric obesity. In: Wadden TA, Stunkard AJ, eds. *Handbook of Obesity Treatment.* New York, NY: Guilford; 2002:532-555.
17. Braet C, Tanghe A, Bode PD, et al. Inpatient treatment of obese children: a multicomponent program without stringent calorie restriction. *Euro J Pediatr.* 2003;162:391-396.
18. Levine MD, Ringham RM, Kalarchian MA, et al. Is family-based behavioral weight control appropriate for severe pediatric obesity? *Int J Eat Disord.* 2001;30:318-328.
19. Epstein LH, Paluch RA, Saelens BE, et al. Changes in eating disorder symptoms with pediatric obesity treatment. *J Pediatr.* 2001;139:58-65.
20. Braet C, Van Winckel M. Long-term follow-up of a cognitive behavioral treatment program for obese children. *Behav Ther.* 2000;31:55-74.
21. Wadden TA, Foster GD, Sarwer DB, et al. Dieting and the development of eating disorders in obese women: results of a randomized controlled trial. *Am J Clin Nutr.* 2004;80:560-568.
22. Groesz LM, Stice E. An experimental test of the effects of dieting on bulimic symptoms: the impact of eating episode frequency. *Behav Res Ther.* 2007;45:49-62.
23. Presnell K, Stice E. An experimental test of the effect of weight loss dieting on bulimic pathology: tipping the scales in a different direction. *J Abnorm Psychol.* 2003;112:166-170.
24. Burton E, Stice E. Evaluation of a healthy-weight treatment program for bulimia nervosa: A preliminary randomized trial. *Behav Res Ther.* 2006;44:1727-1738.
25. Stice E, Martinez EE, Presnell K, et al. Relation of successful dietary restriction to change in bulimic symptoms: a prospective study of adolescent girls. *Health Psychol.* 2006;25:274-281.
26. Neumark-Sztainer D, Jeffery RW, French SA. Self-reported dieting: How should we ask? What does it mean? Associations between dieting and reported energy intake. *Intern J Eat Disord.* 1997;22:437-449.
27. Roberts SJ, Maxwell SM, Bagnall G, et al. The incidence of dieting amongst adolescent girls: a question of interpretation? *J Human Nutr.* 2001;14:103-109.
28. Polivy J, Herman CP, Warsh S. Internal and external components of emotionality in restrained and unrestrained eaters. *J Abnorm Psychol.* 1978;87:497-504.
29. Stunkard AJ, Messick S. The Three-Factor Eating Questionnaire to measure dietary restraint, disinhibition and hunger. *J Psychosom Res.* 1985;29:71-83.
30. Van Strien T, Frijters JER, Bergers GPA, et al. The Dutch Eating Behavior Questionnaire (DEBQ) for assessment of restrained, emotional, and external eating behaviors. *Intern J Eat Disord.* 1986;5:295-315.
31. Stice E, Fisher M, Lowe MR. Are dietary restraint scales valid measures of acute dietary restriction? unobtrusive observational data suggest not. *Psychol Assess.* 2004;16:51-59.
32. Lowe MR, Levine AS. Eating motives and the controversy over dieting: eating less than needed versus less than wanted. *Obesity Res.* 2005;13:797-806.
33. Foster GD, Makris AP, Bailer BA. Behavioral treatment of obesity. *Am J Clin Nutr.* 2005;82:230S-235S.

■ ■ ■ ■ ■

Dietary Guidance to Prevent Cancer: A Commentary on "Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective"

by Norman G. Hord, PhD, MPH, RD

In 1982, the National Academy of Sciences released "Diet, Nutrition and Cancer," a seminal report on the relationship and potential biologic plausibility between diet and the incidence of cancer.[1] More than a decade later, in 1997, the World Cancer Research Fund/American Institute for Cancer Research (WCRF/AICR) released "Food, Nutrition, and the Prevention of Cancer: A Global Perspective," a landmark report that became the standard basis for policy, research, and education with regard to cancer prevention worldwide.

Now clinicians can turn to WCRF/AICR's second report, "Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective," which was published in 2007 and can be accessed at www.aicr.org. Reflecting a unique if not heroic scientific review effort, the 2007 report uses a systematic, evidence-based approach to evaluate over 7,000 studies on all aspects of diet, physical activity, weight management, and cancer risk. It is the most comprehensive single effort ever to evaluate a diet-disease relationship. The project involved the efforts of more than 600 scientists who worked on nine teams for five years to review available evidence. Twenty-one scientists participated in writing the final report.

Highlights of the Report

The highlights of the 2007 WCRF/AICR report lie in its general findings and recommendations as well as specific new insights into the role of diet, lifestyle, growth, and reproductive behaviors in cancer risk. The report concluded that about one third of cancer cases could be prevented if everyone ate a healthy diet, was physically active every day, and maintained a healthy weight. It is estimated that smoking causes about 30% of all cancer deaths in the United States.

The most fascinating aspects of the report are the findings that events early in life greatly influence a person's lifetime cancer risk. The conclusions that growth and early life exposures are closely linked to cancer risk have established a new paradigm for examining the role of diet in cancer risk. This paradigm is termed "the life course approach." Newly identified anthropometric and lifestyle choices, including birthweight, bearing children, breastfeeding, and adult height can influence cancer risk. This approach, suggesting intriguing new directions in cancer research, holds promise in providing insights into the etiology of cancer and its prevention through diet and lifestyle practices.

"The project involved the efforts of more than 600 scientists who worked on nine teams for five years to review available evidence."

Notable findings from the 2007 WCRF/AICR report include the association between high birthweight and increased risk of premenopausal breast cancer. The reason for this link may relate to body fat. Excess adiposity may change the body's hormonal environment in various ways. Ultimately these changes make it more likely for cells to undergo the type of transformation and growth that leads to cancer.

Another early influence on long-term cancer risk that is indirectly associated with body fat relates to menarche. Girls who are overweight may begin menstruation at an earlier age. Thus, over the course of their lifetime they will experience more menstrual cycles, and hence, greater lifelong exposure to estrogen. A greater number of menstrual cycles is associated with increased risk of postmenopausal (but not premenopausal) breast cancer.

The 2007 WCRF/AICR report provides some positive news about the protective effects of breastfeeding. According to the report, once a woman becomes sexually mature, bearing children and breastfeeding those children convincingly lower her lifetime risk of breast cancer. Furthermore, the evidence shows that infants who are breastfed are less likely to become overweight or obese throughout their lifetime, effectively lowering their subsequent risk of cancer.

The observed association between body growth (with "tallness" as its surrogate marker) and cancer risk is rational considering that neoplastic growth is a feature of cancer. Simply put, when cells divide and develop normally, the process is called growth. When cells divide abnormally, ignoring the body's normal growth regulatory mechanisms, that uncontrolled growth may result in cancer. According to the report, there is convincing evidence that people who are tall have a higher risk of colorectal and postmenopausal breast cancer. Tallness also may be linked to increased risk for ovarian, pancreatic,

and premenopausal cancer. The report emphasizes that the association between height and cancer is convincing yet does not mean that a tall person is destined to develop cancer. As such, tallness is an indicator of risk but not a cause of it.

Recommendations

The 10 recommendations for cancer prevention drawn from the 2007 WCRF/AICR report are as follows:

- Be as lean as possible without becoming underweight.
- Be physically active for at least 30 minutes every day.
- Avoid sugary drinks. Limit consumption of energy-dense foods (particularly processed foods high in added sugar, low in fiber, or high in fat).
- Eat more of a variety of vegetables, fruits, whole grains, and legumes such as beans.
- Limit consumption of red meats (such as beef, pork and lamb) and avoid processed meats.
- If consumed at all, limit alcoholic drinks to 2 for men and 1 for women a day.
- Limit consumption of salty foods and foods processed with salt (sodium).
- Don't use supplements to protect against cancer.

Special Population Recommendations:

- It is best for mothers to breastfeed exclusively for up to 6 months and then add other liquids and foods.
- After treatment, cancer survivors should follow the recommendations for cancer prevention.

And always remember: do not smoke or chew tobacco.

The WCRF/AICR approach to cancer prevention is summarized by a graphic that emphasizes three components: 1) weight—aim to be a healthy weight throughout life; 2) diet—choose mostly plant foods, limit red meat and avoid processed meat; and 3) be physically active every day in any way for 30 minutes or more.

Dietary Guidance: Cancer Prevention and Beyond

Foods are generally thought to be "good for us" because they are consumed in social situations among family and friends, and they supply necessary nutrients for health and well-being. Therefore, the act of providing dietary guidance is considered—at least ostensibly—to be a beneficent practice; recommending something we all need should have no negative consequences.

Dietary guidance takes the form of health recommendations from public and private health agencies, books offering dietary advice, and public media such as Web sites, television, radio, and print media. Dietary guidance can be general, such as the Dietary Guidelines for Americans from the U.S. Department of Agriculture/Department of Heath and Human Services (USDA/DHHS), or specific (i.e., offered to reduce risk of primary and secondary health conditions and diseases). These two types of guidance can be distinguished by their intended goals of primary and secondary prevention of diet-related conditions.

On the other hand, food fortification is a historically successful practice to reduce risk of vitamin and mineral deficiency. The decision by the Food and Drug Administration (FDA) to reduce the incidence of neural tube defects with the fortification of flour with folic acid beginning in 1998 is a recent example of this practice.

The phrase *Primum non nocere* ("First do no harm")—the edict associated with Galen and Hippocrates, but attributable to neither—is a famous proscription for medical professionals. The question has been raised as to whether, in the process of issuing dietary guidance in the form of the Dietary Guidelines for Americans, we have violated this principle. Marantz[2] and Pollan[3] have discussed this concern in a recent book and a peer-reviewed article. Noting that the USDA/DHHS issued "one-size-fits-all" dietary advice in the form of low-fat diets to prevent risk of cardiovascular disease, they theorize that these recommendations led to the overconsumption of calories in the form of refined carbohydrates. Among the adverse metabolic consequences of this overconsumption were increased risk of overweight and obesity.[2] According to Marantz: "It raises the possibility of a net harmful effect of seemingly innocuous dietary advice. These dietary recommendations did not necessarily cause harm, but there is a realistic possibility that they may have."

Are these concerns also applicable to recommendations made in "Food, Nutrition, Physical Activity, and the Prevention of Cancer: A Global Perspective"? Most likely they are not, because the WCRF/AICR took a painstakingly thorough, evidence-based approach in developing the report. However, public health measures can have unintended consequences. For example, the aforementioned noncontroversial decision by the FDA to fortify flour with folic acid has been effective in its meeting its primary goal, but it also may have led to the promotion of polyp growth among a significant number of Americans.[5,6]

In the situation where we must make recommendations based on imperfect evidence, it is best done in the manner demonstrated by WCRF/AICR, as follows: 1) Use a comprehensive, evidence-based approach to review the literature; 2) Provide a sense of the strength of the evidence supporting each recommendation; and 3) Tell the public what unanswered questions exist about the associations between dietary factors and disease risk.

The second WCRF/AICR report has "raised the bar" with regard to how to evaluate evidence and make sound dietary recommendations. Since these guidelines are similar in nature to other recent dietary

recommendations for the primary prevention of other chronic diseases, we have a sound basis for public health efforts to reduce the burden of diet-related chronic diseases.[4,7]

Norman G. Hord, PhD, MPH, RD, is an associate professor in the Department of Food Science and Human Nutrition at Michigan State University in East Lansing.

References

1. Committee on Diet, Nutrition and Cancer, Assembly of Life Sciences. Washington, DC: National Research Council. *Diet, Nutrition and Cancer.* National Academy Press; 1982.
2. Marantz PR, Bird ED, Alderman MH. A call for higher standards of evidence for dietary guidelines. *Am J Prev Med.* 2008;34:234-240.
3. Pollan M. *Defense of Food: An Eater's Manifesto.* New York City, NY: Penguin Press; 2008.
4. Reedy J, Krebs-Smith SM. A comparison of food-based recommendations and nutrient values of three food guides: USDA's MyPyramid, NHLBI's Dietary Approaches to Stop Hypertension Eating Plan, and Harvard's Healthy Eating Pyramid. *J Am Diet Assoc.* 2008;108:522-528.
5. Ulrich CM, Potter JD. Folate supplementation: too much of a good thing? *Cancer Epidemiol Biomarkers Prev.* 2006.15:189-193.
6. Ulrich CM, Potter JD. Folate and cancer—timing is everything. *JAMA.* 2007;297:2408-2409.
7. Williams MT, Hord NG. The role of dietary factors in cancer prevention: beyond fruits and vegetables. *Nutr Clin Pract.* 2005;20:451-459.

FROM THE CHAIR

Knowing Where We're Going—and Getting There

"The world makes way for the one who knows where he is going." —Ralph Waldo Emerson

Enhanced professional development, Web-based educational opportunities, increased visibility, and expanded student involvements are areas the SCAN Executive Committee have identified as directing our plan of action during fiscal year 2008-2009.

We begin the year introducing members to SCANNERS (Scientific, Concise, Authoritative Nutrition Nuggets for Everyone's Reference Series). SCANNERS will initially be presented as inserts in *PULSE* and then be available on our Web site (www.scandpg.org) as PDF files for future reference. The topic of ergogenic aids (supplements) launched this new series and others will be available throughout the year on topics related to cardiovascular, wellness, and sports nutrition as well. Please see SCAN's Web site for details on submitting topic suggestions and proposals for authorship.

Plans are also well under way for other online educational opportunities such as podcasts. Additionally, following in the footsteps of the successful Sports Dietetics-USA (SD-USA) sub-unit and the Board Certification as a Specialist in Sports Dietetics (CSSD) credential from the Commission of Dietetic Registration, SCAN has launched the very high prioritized initiative to identify core groups of members committed to re-energizing the cardiovascular and wellness areas. Meetings were held at the recent SCAN Symposium in Boston and a plan of action was identified. Members will be kept informed of these developments and encouraged to participate via upcoming e-blasts.

The next opportunity for SCAN members to gather will be the 2008 ADA Food & Nutrition Conference & Expo (FNCE) on October 25-28 in Chicago. SCAN will be hosting a reception for members on Sunday, October 26, and it would be my great pleasure to see you there. For information on other SCAN highlights at FNCE, see page 21.

In closing, I would like to share a story with you that is applicable to my philosophy as your SCAN chair: My husband's 91-year-old grandmother was an exceptional cook and avid entertainer who orchestrated countless Greek baking committees for church fundraising. One holiday season she stayed with us and joined me in the kitchen. Her arm was broken and mobility was a challenge, yet she insisted on standing stove-side as I prepared a wild rice mushroom soup. I asked her why on earth *she* would need to watch *me* cook, since she was the expert. She looked at me and said, "Everyone has something to teach and something to learn." Those words echo in my mind to this day.

So never hesitate to communicate your comments, suggestions, and ideas for SCAN. Whether we are seasoned or new SCAN members, we each indeed have something to teach and something to learn.

Warmest regards,

Hope Barkoukis, PhD, RD
2008-2009 SCAN Chair

CONFERENCE HIGHLIGHTS

24th Annual SCAN Symposium

April 11-13, 2008
Boston, Mass.

SCAN members and many other professionals gathered at the 24th Annual SCAN Symposium, "And the Beat Goes On—Heart Health and Sports Nutrition," to collaborate with colleagues, explore the latest information and cutting-edge insights on nutrition and fitness, and participate in numerous networking opportunities. A small sampling of the presentations featured at this well-attended conference is summarized below in this report.

Next year's SCAN Symposium, "The Wonders of Wellness," will mark the 25th year that SCAN's signature event has been held. Be sure to save the dates—April 16-19, 2009—and meet your colleagues in Scottsdale, Ariz., to celebrate the silver anniversary of SCAN's most popular offering.

Following are a few highlights from the recent 2008 SCAN Symposium:

Vitamin D Deficiency and Its Consequences

The deleterious effects of vitamin D deficiency—considered to be at pandemic proportions—and recommended supplementation requirements were discussed by Michael F. Holick, PhD, MD, professor of medicine, physiology and biophysics at Boston University Medical Center in Massachusetts.

Most humans depend on sunlight to obtain the required amount of vitamin D. During exposure to sunlight, 7-dehydrocholesterol in the skin is converted to previtamin D_3. Once formed, previtamin D_3 quickly isomerizes to vitamin D_3 by a membrane mediated process. Season, latitude, pigmentation, age, and use of sunscreen can dramatically affect the cutaneous production of vitamin D_3. Vitamin D_3 is metabolized in the liver and kidney sequentially to 1,25-dihydroxyvitamin D [$1,25(OH)_2D$].

Pregnant women, infants, children, and adults are all at risk of vitamin D deficiency and its consequences. In children, vitamin D deficiency can result in stunting of growth and rickets; in adults, the deficiency can lead to increased risk of osteoporosis and the painful bone disease osteomalacia. In addition, vitamin D deficiency has been associated with increased risk of many chronic diseases including common cancers (e.g., prostate, breast, colon, ovarian), autoimmune diseases (type I diabetes, rheumatoid arthritis, and multiple sclerosis), and cardiovascular disease.

> "…vitamin D deficiency has been associated with increased risk of many chronic diseases including common cancers."

It is now recognized that most tissues and cells in the body have neither the ability to recognize $1,25(OH)_2D$ nor the enzymatic machinery to make it. A multitude of non-calcemic biologic effects are ascribed to $1,25(OH)_2D$, including regulation of cellular proliferation and differentiation, immunomodulation, and regulation of renin production.

Vitamin D_2 has recently been found to be equally effective as vitamin D_3. In the absence of sun exposure, at least 1,000 IU of vitamin D_2 or vitamin D_3 per day is required to maintain healthy blood levels (30-60 ng/mL) of 1,25(OH)D.

Soyfoods and Coronary Heart Disease

The cholesterol-lowering activity and other beneficial effects of soyfoods were examined by Mark Messina, PhD, MS, adjunct associate professor in the Department of Nutrition, School of Public Health, Loma Linda University in California, and president of Nutrition Matters, Inc., Port Townsend, Wash.

He began his presentation with a brief historical perspective on views regarding soyfoods and heart health. In 1999, the U.S. Food and Drug Administration (FDA) approved a health claim for soy and coronary heart disease (CHD), based on the direct cholesterol-lowering effects of soy protein. However, in 2006 the American Heart Association questioned the coronary benefits of soy protein, and on December 21, 2007 the FDA announced its intention to reevaluate the scientific evidence in support of the soy health claim.

Since 1999, more than 60 clinical studies have evaluated the hypocholesterolemic effects of soy protein. The results from these studies indicate that soy protein lowers low-density lipoprotein (LDL)-cholesterol by approximately 4%. Although this is less than previously thought, is it still a relevant reduction at the population level. Over time, this degree of reduction can result in a lowering of CHD by approximately 10%.

In addition to the direct effects of soy protein, a further reduction in circulating LDL-cholesterol serum levels can be achieved when soyfoods

are substituted for more traditional sources of protein in the diet, which are generally higher in saturated fat. Furthermore, although the inconsistent data prevent definitive conclusions from being made, there is intriguing clinical and epidemiologic evidence indicating that soyfoods, perhaps in part because they contain isoflavones, reduce CHD risk through mechanisms independent of cholesterol levels. For example, studies have shown that isoflavones inhibit LDL-cholesterol oxidation and improve endothelial function. Other studies have demonstrated that soy protein increases LDL particle size and reduces blood pressure.

Finally, although isoflavones do exert estrogen-like effects under certain experimental conditions, the clinical and epidemiologic evidence indicates that soyfood intake does not lead to any untoward effects.

Role of Iron Status in Cardiovascular Disease and Athletes

The impact of exercise on iron status and cardiovascular health was discussed by John Beard, PhD, professor of nutritional sciences, Department of Nutritional Sciences, Pennsylvania State University, University Park.

Exercise has both benefits and consequences with respect to cardiovascular health. There are ample studies to suggest that regular aerobic exercise can alter blood lipid profiles, assist in weight reduction plans, improve glucose clearance, and lead to an overall reduction in cardiovascular risk. However, several other studies show that vigorous exercise can alter iron homeostasis, leading to an increased likelihood of iron deficiency.

The production of reactive oxygen species is related to exercise, iron status, and antioxidant nutrient status. Iron requirements are increased in chronic heavy exercisers due to increased rates of red cell destruction, gastrointestinal bleeding in some cases, and perhaps decreased whole body retention of iron. Anemia is a powerful and independent risk factor for heart failure. Iron deficiency, even without anemia, is associated with decreased performance and alterations in exercise efficiency.

Supplements will remedy iron deficiency in most cases, but there exists the perception that "high iron status" is associated with increased myocardial infarction rates and cardiovascular disease. This relationship might well exist in individuals from eastern Finland, but surveys in Europe, Canada, and the United States fail to support that conceptual framework. Genetic alterations, such as hereditary hemochromatosis, may seriously alter the advice that moderate amounts of exercise is beneficial, because cardiac accumulation of iron is a hallmark of hemochromatosis. The risk-benefit ratio of iron supplementation and fortification needs to be constantly re-evaluated within this context.



"Genetic alterations...may seriously alter the advice that moderate amounts of exercise is beneficial, because cardiac accumulation of iron is a hallmark of hemochromatosis."

Nutrition Strategies and Cardiovascular Health

Noting that healthy lifestyle practices are the cornerstone for the prevention and treatment of cardiovascular disease (CVD), Penny M. Kris-Etherton, PhD, RD, Department of Nutritional Sciences, The Pennsylvania State University, University Park, explored new developments in nutrition strategies in this field.

Dietary patterns high in fruits, vegetables, fat-free/low-fat dairy products, whole grains, lean meats, fatty fish, and nuts have been shown to markedly decrease significant CVD risk factors. However, the same dietary intervention implemented in less controlled settings for longer periods of time (e.g., the Portfolio Diet Studies, the Dietary Approaches to Stop Hypertension (DASH) Sodium Trial and the Premier Trial, and the Lifestyle Heart Studies) elicit an appreciably lower CVD risk marker response than noted in tightly controlled/controlled feeding settings. These studies demonstrate a key role for registered dietitians in helping patients adhere to a healthy dietary pattern that achieves maximal CVD risk reduction.

The important role of the RD in achieving the goals of medical nutrition therapy (MNT) is well-established. Medical nutrition therapy has been shown to be an effective approach for changing dietary intake and reducing total and low-density lipoprotein (LDL)-cholesterol and body weight. Greater decreases in total cholesterol and LDL-cholesterol occur with increasing number of MNT visits and time spent with a dietitian.

New research has shown that factors beyond adherence that affect diet responsiveness include an elevated inflammatory status, insulin resistance, and overweight/obesity. Collectively, the cholesterol-lowering response to diet is attenuated by as much as 50% in individuals who have high levels of C-reactive protein, are insulin resistant, and are overweight. To maximize the effects of a healthy dietary pattern, dietitians play a key role in treating these comorbid conditions. Diet and lifestyle factors that have been shown to decrease inflammation include weight loss,

low glycemic load, the Portfolio Diet, high walnut diet, dietary fiber, whole grains, omega-3 fatty acids, and cocoa.

There are key foods that have potent effects on reducing CVD risk factor status. These include: fish (particularly fatty fish), nuts, whole grains, fruits and vegetables, dairy products, alcohol (in moderation), and legumes among other foods such as chocolate and tomatoes. The cardioprotective effects of these foods are mediated by an array of CVD risk factors, including both established and emerging risk factors.

In an era of food-based research, it is likely that other foods as well as dietary constituents that decrease CVD risk will be identified. As always, the challenge is communicating this to the public in an understandable manner that can be easily and successfully implemented over the long term. Moreover, practitioners will need to be more proficient in individualizing dietary guidance in a way that targets specific risk factors or clusters of risk factors to achieve maximal CVD risk reduction.

Tufts University Friedman School of Nutrition Science and Policy Conference

"What You Eat. What You Do. Who You Are"
October 29-31, 2007
Boston, Mass.

by Nancy Clark, MS, RD, CSSD

The Tufts University Friedman School of Nutrition Science and Policy assembled 20 speakers from the United States, United Kingdom, France, Italy, and the Netherlands to address the impact on health of food choices, eating and exercise behaviors, nutrition interventions, and genetics. More than 200 health professionals, members of the media, and industry representatives attended the conference. The cumulative message that evolved was that nutrition is a changing science that lends to confusion about how to eat for optimal health.

Here are some highlights that help define the sources of nutrition confusion:

Source of Confusion #1: Genetic Differences

Should we avoid foods such as eggs, salt, and sugar? Should we take supplements such as fish oil, calcium, and vitamin D? Although those seem like simple questions, the answers are difficult because we all have genetic differences that impact our nutrient needs. For example, salt can raise blood pressure in one person, but make no difference in another. Hence, genetic variation skews the research results and ensuing recommendations.



"We do not yet know if genetic testing is a wise way to resolve nutrition confusion."

Within our lifetime, genetic testing will offer personalized answers regarding who should or should not eat such things as salt. But genetic testing also raises concerns. On the one hand, if you inform persons who are salt-sensitive that their blood pressure will rise if they eat salt, they will likely be inclined to cut back on their salt intake. However, if you tell those with no salt sensitivity that salt will have no effect on their blood pressure, will they abandon all discretion and consume extraordinary amounts of salt—creating other health problems? We do not yet know if genetic testing is a wise way to resolve nutrition confusion.

Source of Confusion #2: Inadequate Research

Meaningful nutrition studies are difficult to perform. Good studies need to explore, for example, the effects of different doses of a substance over a long period of time in a variety of people, including large numbers of men, women, children, seniors, athletes, whites, African Americans, and many others. Such studies are both expensive and difficult to fund. Food companies generally will not reap profits from funding such research because they cannot patent foods. In contrast, pharmaceutical companies can obtain drug patents and make attractive profits once a drug is proven effective.

Source of Confusion #3: Ethics

Unlike drug studies, in which the subjects are drug-free until they take the drug, nutrition studies use subjects that already have vitamins stored in their bodies. Hence, nutrition research can only contrast a high vitamin intake with a low intake. To determine the thresholds at which a vitamin creates desired (or undesired) effects can take weeks or months, driving up the cost of the study.

Source of Confusion #4: Nutrients Work Synergistically

It can be difficult to pinpoint what to focus on in a study. For example, among investigations that evaluate calcium supplementation and bone fracture risk, those that took only calcium supplementation (without vitamin D) indicate calcium does not reduce bone fractures. However, research of calcium plus vitamin D supplementation suggests improved bone health, because calcium works synergistically with vitamin D.

Another confounding issue is that nutrients such as calcium have differing effects at different intakes. It's hard to know at what level the nutrient is most effective and at what level it offers no additional benefits.

Source of Confusion #5: What Food Component to Study
Foods contain many components. When nutrition researchers attempt to connect a food to a disease, they often don't know which component of the food to study. For example, we know that eating fruits and vegetables reduces cancer, but which components of those foods—vitamin C, folate, beta-carotene, potassium, fiber, phytochemicals, or others—are cancer-protective?

Source of Confusion #6: Different Effects of Foods at Different Ages
Women of child-bearing age may avoid eating fish because of the fear that the mercury in fish will damage their baby. However, fish provides an excellent source of the omega-3 fats that are essential for optimal brain development in the fetus. Consuming too little omega-3s can contribute to irreversible brain development problems.

Animal studies demonstrate that a low intake of decosahexaenoic acid (DHA) results in slower brain maturation, attention problems, impulsivity, and reduced problem-solving skills. Moreover, human studies show that supplementation of the maternal diet with DHA is associated with babies that learn faster and remember information better than babies whose mothers did not receive DHA supplementation. These benefits translate into higher intelligence quotient (IQ) scores by age 4 and into longer sustained attention by age 5. Women who have been been reluctant to eat fish because of fear of mercury poisoning need to look at the entire picture. A typical 5-oz serving of salmon offers 1,000 mg of DHA; the recommended daily intake is 220 mg.

Source of Confusion #7: Delayed Effects of a Poor Diet
The effects of poor nutrition can take years to unfold. The longer you live, the higher your risk of dementia. Whereas only 1% of 60-year-olds have dementia, 40% of 90-year- olds do. This risk can be reduced by eating more fruits and vegetables, and eating fish twice a week. What is good for the heart is also good for the brain!



"Women who have been been reluctant to eat fish because of fear of mercury poisoning need to look at the entire picture."

Source of Confusion #8: Incorrect Messages about Weight
Messages to lose weight should really be focused on losing body fat. The popular crash diets that promote quick weight loss result in significant muscle loss. Good health depends on muscle mass.

Source of Confusion #9: Advertisements
Because ads for vitamin supplements and drugs downplay the importance of diet and exercise, these substances appear to consumers to be more effective than eating well and exercising regularly. Too few people realize that exercise is the best way to improve overall health and immune response, particularly as we age.

There's no confusion about this: Fit elderly people who exercise regularly have faster wound healing, better survival of the flu and viruses, and less inflammation. Eating well to fuel an active lifestyle is without question an important key to lifelong health and longevity.

Nancy Clark, MS, RD, CSSD, is author of Nancy Clark's Sports Nutrition Guidebook, 4th edition *(2008) and is in private practice in Chestnut Hill, Mass.*

REVIEWS

Fitness Nutrition for Special Dietary Needs

Stella Lucia Volpe, PhD, RD; Sara Bernier Sabelawski, Med, RD; Christopher Mohr, PhD, RD, CSSD
Human Kinetics, PO Box 5076, Champaign, IL 61825-5076
800/747-4457, www.humankinetics.com
2007, softcover, 185 pp, $12.95,
ISBN 10: 0-7360-4812-X

Fitness Nutrition for Special Dietary Needs is a practical, straightforward resource for health care professionals who work with athletes of all levels, although a nutrition-savvy athlete also may benefit from reading it. The primary strength of this book is the incredible amount of information creatively presented in text boxes and tables, sample meal plans, and more than 40 reproducible handouts. As another unique feature, the book presents case studies at the end of each chapter to engage the reader in practical application.

The chapters cover the following special populations: children, older adults, female athletes, vegetarian athletes, overweight athletes, athletes with diabetes, athletes with eating disorders, and athletes in extreme environments.

In chapter 1, the authors emphasize that children are not 'little adult' athletes; rather, their dietary needs are very different than adults. Chapter 2 examines the physiologic changes in aging and provides specific exercise guidelines. Chapter 3 focuses on menopause and how to manage menopausal symptoms through diet and exercise. Chapter 4 discusses the increased nutrition needs during pregnancy and how to safely exercise. Chapter 5 gives the basics of a vegetarian diet, nutritional concerns, and how to address those concerns. Chapter 6 covers overweight and obesity and has an extensive section on weight loss supplements. Chapter 7 provides the critical basics for people with diabetes, including carbohydrate intake and timing with exercise. Chapter 8 addresses general principles and strategies for managing disordered eating. The final chapter focuses on exercising in extreme environmental conditions, such as heat and humidity, cold, and high altitude.

The beginning of each chapter provides a description of the condition being addressed. Most dietitians will be able to skip that section and jump right to the nutrition and exercise guidelines. Others, such as coaches or athletic trainers, will benefit from reading accurate, up-to-date information about the condition before moving on to the rest of the chapter.

> "This book is perfect for dietitians working with active clients who exercise for health and fitness."

This book is perfect for dietitians working with active clients who exercise for health and fitness. It also can help coaches, athletic trainers, physical therapists and personal trainers provide sound advice. The content may be a bit basic for dietitians already working with elite athletes, but the handouts, meal plans, charts, and case studies make it a worthwhile purchase for even the most seasoned sports nutritionist.

Stella Lucia Volpe, PhD, RD, is associate professor and the Miriam Stirl Term endowed chair of nutrition at the University of Pennsylvania School of Nursing. Sara Bernier Sabelawski, Med, RD, is a lecturer and undergraduate didactic program director at the University of Massachusetts at Amherst. Christopher R. Mohr, PhD, RD, CSSD, is president of Mohr Results, Inc., a fitness and nutrition consulting company that works with all levels of athletes.

Reviewed by Christine Karpinski, MA, RD, CSSD, exercise physiologist and sport nutritionist in private practice, and adjunct professor at West Chester University in West Chester, Pa.

Counseling Tips for Nutrition Therapists: Practice Workbook, Volume 1

Molly Kellogg, RD, LCSW
Kg Press, 100 E. Sedgwick Street, Philadelphia, PA 19119
215/ 843-8258, www.KgPress.com
2006, softcover, 196 pp, $39,
ISBN: 1-933-94402-1

Nutrition counseling is a skill many dietitians use every day to provide education and guidance to their clients. In terms of formalized training, most dietitians have taken a course at some point to further their education, but many will say their skills really developed while on the job. During counseling sessions, dietitians not only provide nutrition education to clients but they also uncover many food-related issues, emotions, and psychological connections that contribute to eating problems. Some dietitians may come across areas related to food in which they have had no training on

providing advice, but after practicing and gaining experience have learned skills in these difficult areas.

Molly Kellogg, RD, LCSW, is an outstanding resource for dietitians in the counseling role. As seen in her credentials, the author not only has the nutritional expertise but also a social work perspective. In *Counseling Tips for Nutrition Therapists: Practice Workbook, Volume 1,* she has created an inspirational workbook for clinicians. Interestingly, in her introduction she encourages readers not to necessarily read the book from front to back, but instead turn to chapters that specifically pertain to a topic that they are encountering or that appeal to them. Chapters are referred to as "tips."

In each chapter the author gives an explanation of the tip explored, provides personal or colleague's experiences, and interweaves psychological perspectives in health behavior, eating, and counseling—making this book realistic for clinicians. At times I could envision the client and counselor working through issues, and this was further reinforced by the author's psychological analysis throughout the chapter. The practice steps at the end of each chapter are exercises that will help clinicians improve their counseling skills on many levels.

This publication is more than a motivational piece for those involved in nutrition counseling. It also is a tool to help improve counseling skills and it contains some deep psychological perspectives. Dietitians working in any type of counseling situation will be able to use these tips and advice to reach their clients on a different level.

Molly Kellogg, RD, LCSW, is a registered dietitian and psychotherapist in Philadelphia, Pa. She is well-known for her expertise in health-behavior change and counseling workshops for health professionals.

Reviewed by Heather Cunningham, RD, CNSD, home care clinical nutrition support specialist, Livingston, NJ.

Grocery Shopping Made Easy: From Apples to Zucchini DVD

Christopher R. Mohr, PhD, RD, CSSD, and Kara Mohr, Ph D, FACSM
www.mohrresults.com
2007, DVD, $ 39.95

Grocery shoppers seeking tips for health product selection can turn to two new educational resources: the



"Viewers will appreciate the attention to detail made towards product recommendations and serving sizes."

Grocery Shopping Made Easy: From Apples to Zucchini DVD and its accompanying manual. The authors encourage viewers to consume "a rainbow of colors for fruits and vegetables," read nutrition labels on packages, and be cautious of supermarket tactics. They also thoroughly discuss guidelines for the purchasing of organic foods, whole grain products, seafood, meats, dairy foods, canned foods, as well as fats such as butter and margarine.

Another feature of the DVD demonstrates how to maximize the use of www.mypyramid.gov. Health educators and nutrition enthusiasts are reminded of this useful Web site, which will assist by providing more specific information pertaining to the food groups and the promotion of physical activity for a healthier lifestyle.

Viewers will appreciate the attention to detail made towards product recommendations and serving sizes. For example, the authors suggest less than 10 g of sugar and at least 3 g of fiber should be included in one serving of cereal. For budget shoppers, frozen produce is recommended because it shares the similar nutritional content of fresh produce. The authors support this statement by explaining fruit is frozen at its peak of ripeness.

Health conscious consumers are advised to create and adhere to a shopping list to avoid grocery store marketing traps identified by the authors. Shopping the perimeter of the store, being aware of appetite stimulant colors (red, orange, and yellow), and never shopping on an empty stomach are additional recommendations emphasized in the program.

Registered dietitians and health educators will be able to extract beneficial information from *Grocery Shopping Made Easy: From Apples to Zucchini* and share it with individuals seeking healthier shopping ideas.

Christopher Mohr, PhD, RD, CSSD, and Kara Mohr, PhD, FACSM, are co-owners of Mohr Results Inc. This fitness and nutrition company provides consulting to enhance performance and health for private companies and the media outlet.

Reviewed by Stephanie R. De Leon, MS, RD, Health Coach for Avidyn Health, a national health management company.

SPORTS DIETETICS USA RESEARCH DIGEST

Effects of a Carbohydrate-Protein Beverage on Exercise-Induced Muscle Injury

Green MS, Corona BT, Doyle JA, Ingalls CP. Carbohydrate-protein drinks do not enhance recovery from exercise-induced muscle injury. *Int J Sport Nutr Exerc Metab.* 2008;18:1-18.

Nutrient supplementation with carbohydrate and protein are commonly used to enhance recovery. It recently has been shown that the consumption of carbohydrate-protein beverages may promote net positive protein balance and attenuate markers of exercise-induced muscle injury. The purpose of this study was to determine whether the consumption of a beverage containing carbohydrate and protein (CHO+PRO) or carbohydrate (CHO) alone following eccentric exercise affects recovery after muscle injury. In this randomized, double-blind study, 18 female recreational athletes underwent six 5-minute intervals of downhill treadmill running (~12% grade, 8 mph) to induce muscle injury. Participants ingested a CHO, CHO+PRO, or an isovolumetric, noncaloric placebo (PLA) at 0, 30, and 60 minutes post-exercise. CHO and CHO+PRO beverages contained 1.2 g CHO/kg body weight (BW) and 0.6 g CHO/kg BW, respectively, and were administered at 1 and 2 hours post-injury, with CHO+PRO containing an additional 0.3 g PRO/kg BW and 0.15 g PRO/kg BW for the same time points. Exercise-induced muscle injury and pre- and post-injury recovery rate were assessed by maximal isometric quadriceps strength (QUAD), lower extremity muscle soreness (SOR), and serum creatine kinase (CK) at baseline, immediately post-exercise, and 1, 2, and 3 days post-injury. Diet was not controlled. There was no effect of treatment beverage on baseline recovery values of QUAD, SOR, or CK. For all groups, post-exercise QUAD was reduced compared with pre-exercise values by 20.6% ± 1.5%, 17.2% ± 2.3%, and 11.3% ± 2.3% immediately, 1, and 2 days post-injury, respectively ($P<.05$). SOR peaked at 2 days ($P<.01$) and serum CK at 1 day post-injury ($P<.01$) in all groups. These findings indicate that the consumption of CHO or CHO-PRO beverages following strenuous exercise does not enhance recovery of muscle injury from eccentric exercise.

> "These findings indicate that the consumption of CHO or CHO-PRO beverages following strenuous exercise does not enhance recovery of muscle injury from eccentric exercise."

Summarized by Jennifer Lee, BSc, graduate student in nutritional science, University of California, Davis.

Endurance Performance and Ingestion of Multiple Transportable Carbohydrates

Currell K, Jeukendrup A. Superior endurance performance with ingestion of multiple transportable carbohydrates. *Med Sci Sports Exerc.* 2008;40:275-281.

Ingestion of carbohydrates during endurance exercise is a widely used strategy to improve athletic performance. It has long been thought that the exogenous carbohydrate oxidation rate could not exceed g·min^{-1} even at high rates of ingestion. This crossover, randomized study compared the effects of a glucose plus fructose (GF) drink (in a 2:1 ratio) with a glucose (G) only drink (both 14.4% CHO at a rate of 1.8 g·min^{-1}) and a water placebo (P) on endurance performance. Eight male trained cyclists consumed one of these beverages every 15 minutes during 120 minutes of cycling at 55% Wmax (maximum power output) followed by a 40-km time trial. Blood glucose, blood lactate, gas exchange variables, heart rate, and rating of perceived exertion (RPE) were measured every 15 minutes during steady state exercise. Results of the study showed that the ingestion of GF was associated with an 8% and 19% higher power output and quicker time to completion of the time trial compared with G and P, respectively ($P<.05$). Blood glucose was higher for both GF and G compared with P, and lactate was greater for GF at 15 minutes compared with G and P ($P<.05$). Researchers concluded that ingesting a carbohydrate beverage containing GF in a 2:1 ratio at a rate of 1.8 g·min^{-1} may improve performance for endurance athletes more than G alone. It is speculated that this is due to increased exogenous carbohydrate oxidation

and greater sparing of endogenous carbohydrate stores.

This study was supported by a grant from GlaxoSmithKline Consumer Healthcare Ltd.

Summarized by Beth Wolfgram CSCS, MS, RD, CD, sports dietitian and adjunct faculty, Division of Nutrition, University of Utah, Salt Lake City.

Creatine Supplementation and Glycogen Storage

Sewell DA, Robinson TM, Greenhaff PL. Creatine supplementation does not affect human skeletal muscle glycogen content in the absence of prior exercise. *J Appl Physiol.* 2008;104:508-512.

Creatine supplementation increases muscle creatine content, and some studies show enhanced glycogen synthesis post-exercise when creatine is co-ingested with carbohydrates. The purpose of this study was to determine whether creatine per se can increase muscle glycogen storage in the absence of exercise and under controlled habitual dietary intake. In this crossover study, six healthy male subjects reported to the laboratory on three, non-randomized occasions to participate in a cycling protocol to exhaustion: 1) in the absence of any supplementation; 2) after 5 days of supplementation with carbohydrate (4 x 500 mL containing 18.5% glucose and simple sugars, Lucozade); and 3) after 5 days of creatine monohydrate supplementation (4 x 5 g/day). Each supplementation period was preceded by a 2-week wash-out. Muscle biopsies were taken at rest before exercise and at time of exhaustion. Creatine supplementation increased muscle creatine content ($P<.01$). Carbohydrate supplementation resulted in increased glycogen content ($P<.05$), with no effect of creatine supplementation on glycogen content either at rest before or after exhaustive exercise. The authors suggested that any creatine-associated increase in muscle glycogen storage may be the result of mediators other than carbohydrate intake. Sports dietitians are encouraged to evaluate the timing of creatine and carbohydrate intake relative to exercise when creatine is used for the purpose of both performance enhancement and muscle glycogen repletion.



"The authors suggested that any creatine-associated increase in muscle glycogen storage may be the result of mediators other than carbohydrate intake."

This study was supported by a grant by Experimental and Applied Sciences.

Summarized by Nanna L. Meyer, PhD, RD, CSSD, research associate and sports dietitian, The Orthopedic Specialty Hospital (TOSH), Salt Lake City, Utah.

Exercise-induced Energy Deficiency, Protein Intake, and Nitrogen Balance

Pikosky MA, Smith TJ, Grediagin A, et al. Increased protein maintains nitrogen balance during exercise-induced energy deficit. *Med Sci Sports Exerc.* 2008;40:505-512.

Energy deficits, incurred either by a decrease in energy intake or an increase in energy expenditure, result in negative energy and nitrogen balance, weight loss, and loss of fat free mass. A higher protein intake under such conditions may be able to preserve fat free mass, particularly under exercising conditions. This cross-sectional study investigated two levels of protein intake during an exercise-induced energy deficit on nitrogen balance and whole body protein turnover using stable isotopes. Twenty-two healthy males completed a 4-day baseline period of energy balance, followed by 7 days of increasing energy expenditure through submaximal aerobic exercise. One group maintained energy balance with no exercise and consumed 0.9 g/kg/day of protein (BAL). The two other groups consumed their baseline diet with added exercise (1,000 kcal/d) and two different protein intake levels (0.9 g/kg/d [DEF] versus 1.8 g/kg/d [DEF-HP]). Nitrogen balance was measured on days 1 through 4, 5 through 8, and 9 through 11, whereas whole body protein turnover was derived from kinetics of phenylalanine and tyrosine over a 4-hour period at rest after an overnight fast on days 4, 7, and 12. Results showed that BAL and increased dietary protein (DEF-HP) maintained nitrogen balance over time compared with DEF, which experienced a significant decrease in nitrogen balance ($P<.05$). However, no differences were found between or within groups for whole body

Interested in Sumarizing a Research Report?

If you would like t o write for the "Sports Dietetics USA Research Digest," see page 22 for details.

SCAN NOTABLES

by Michele Barrack, MS, CSCS

■ **Chris Rosenbloom, PhD, RD, CSSD,** was honored with the 2008 SCAN Achievement Award at the recent SCAN Symposium. The award pays tribute to a deserving SCAN member who has made outstanding contributions to SCAN and the dietetics profession.

Chris is the associate dean for academics in the College of Health and Human Services at Georgia State University and a professor of nutrition. She authors the weekly "Fit to Eat" column in the *Atlanta Journal Constitution* and is the contributing editor on sports nutrition for the professional publication, *Nutrition Today.*

As an active SCAN member and leader since the early 1990s, Chris has lent her talents to SCAN in various capacities. Her past positions with SCAN include serving as sports nutrition editor for *SCAN'S PULSE (*1996-2001); editor of the 3rd edition of SCAN's manual, *Sports Nutrition: A Guide for the Professional Working with Active People* (2000); director of continuing education (2003-2004); SCAN chair (2005-2006); and editor of the CD Rom "Sports Nutrition: Client Education Handouts," which accompanies the 4th edition of SCAN's sports manual (2006).

Currently Chris serves as chair of the Education Advisory Board for the Gatorade Sports Science Institute. She was the sports nutrition consultant to the Georgia Tech Athletic Association for many years, and currently provides nutrition consultation to more than 200 athletes at Georgia State University.

Serving as a mentor to nutrition and dietetics students as well as a university professor for the past 28 years, Chris has provided numerous opportunities for students to gain experience in sports nutrition through internships, research, and publications. She has published several articles and book chapters with students as co-authors.

Chris earned her BS degree in nutrition and dietetics from Kent State University, her MEd degree in nutrition education from Georgia State University, and her PhD in sociology from Georgia State University.

■ **Nancy Clark, MS, RD, CSSD,** was the recipient of the 2008 Excellence in Practice Award presented at the recent SCAN Symposium. She was awarded this honor for her many contributions to the field of sports dietetics.

Nancy counsels both competitive athletes and casual exercisers in her successful private practice located at Healthworks, the premier fitness center in Chestnut Hill, Mass. Previously she was director of nutrition services at SportsMedicine Associates in Brookline, Mass. In the 28 years that she has specialized in sports dietetics, Nancy has helped thousands of clients. Her nutrition advice and photo have even graced the back of the Wheaties' box. Her bestselling book, *Nancy Clark's Sports Nutrition Guidebook,* has sold more than 500,000, and was recently released in a 4th edition. Nancy also writes a monthly column, "The Athlete's Kitchen," which appears in more than 100 sports publications and Web sites.

In addition to encouraging active people to win with wise fueling strategies, Nancy has inspired many RDs to become sports dietitians. For more than 20 years in her Nutrition & Exercise workshop series co-led with exercise physiologist William Evans, PhD, Nancy has encouraged aspiring sports dietitians to turn their dreams into reality. She also has worked hard to educate trainers, coaches, and other health professionals on the value of partnering with RDs.

Nancy has been actively involved in SCAN for many years and currently serves as editor for "Conference Highlights" in *SCAN'S PULSE.* She also is chair of the Nutrition Entrepreneurs dietetic practice group's Author Specialty Group, and co-chair of the American College of Sports Medicine's Nutrition Interest Group.

Nancy completed her undergraduate degree in nutrition from Simmons College in Boston, and in 2007 was awarded the Simmons College Distinguished Alumna Award. She earned her MS degree in nutrition with a focus on exercise physiology from Boston University. Nancy is a fellow of the American Dietetic Association and the American College of Sports Medicine.

■ We are pleased to recognize the outstanding accomplishment of 19 dietitians who have served as active SCAN members for the past 50 or 51 years.

Celebrating their 51st year anniversary are: **Laverne Anderson, RetRD; Virginia Anderson, RD; Ruth Bradley, RD; Marian Burkhardt, RD; Virginia Casteen, MBA, RD; Ruth Devoe, RD; Marion Franz, MS, RD, CDE; Edith Glazener, RD; Margaret Latimer, MBA, RD; Mary LeBlanc, MS; Mary Jane Lee, MA, RD; Dorothy Rowe, PhD, RD, FADA; Clemmie Saxton, PhD, RD; Kathleen Slamkowski, RD; Ruth Stamper, MS; Lois Wangerman, MA, RD; Loraine Zuckerman, MS, RD;** those celebrating 50 years as SCAN DPG members are **Clara Brown, RetRD,** and **Nancy Ullrich, RD.**

These members will receive a congratulatory letter signed by Marty Yadrick, MS, MBA, RD, FADA,

2008-2009 ADA president and a past SCAN chair, a personalized certificate, and complimentary registration to attend the ADA Food & Nutrition Conference & Expo (FNCE) in Chicago, Ill., where they also will be honored.

■ The Dr. Tinsley Harrison Award from the *American Journal of Medical Sciences* was given to **Vijaya Juturu, PhD, FACN,** February 2008 in New Orleans. This award is presented to the author of what the editors deem the best original manuscript published in *AJMS* that year.

■ **Amy Goodson, MS, RD,** was recognized as a Young Dietitian of the Year for Texas, 2008. Amy is a contributor and editor of the Sports Dietetics-USA electronic newsletter and a sports dietitian at Texas Christian University in Fort Worth, Texas.

■ **Matt Sebastian MEd, RD, CDE,** was recently named Recognized Young Dietitian of the Year for Ohio, 2008.

■ The publisher of *Kentuckiana HealthFitness Magazine* and *Kentuckiana Healthy Woman Magazine* and radio show host **Barbara Day, MS, RD,** has been appointed to the Kentucky Governor's Council on Wellness and Physical Activity Board. Barbara has been promoting healthy lifestyles to consumers for more than 35 years.

■ Two private practice SCAN members in Seattle, Wash., **Minh-Hai Train, MS, RD,** and **Kathleen Putnam, MS, RD,** recently launched their own all-natural nutrition bar line, called Zing Bars. The goal of their company, Northwest Nutritional Foods, LLC, is to make delicious, convenient, nutritious food more readily available to patients, families, and the public.

■ Two SCAN members have been featured in *Cooking Light:* **Karen Daigle, MS, RD, CSSD,** was interviewed for the article "Expert Insights: Eat to Become a Better Athlete" in the March/April 2008 issue. **Leslie Bonci, MPH, RD, CSSD,** was interviewed for the article "Tips from a Pro: Learn How an NFL Nutritionist Finds Time for Fitness" published in January.

■ The expertise of SCAN dietitians has been highlighted in several news and business publications. **Suzanne Girard Eberle, MS, RD, CSSD,** provided sports nutrition recommendations in the *Los Angeles Times* article "The Right Fuel for You" in February 2008. In January 2008, **Lisa Dorfman, MS, RD, CSSD, LMHC,** was interviewed in *The Wall Street Journal* and offered her advice for the article "Training on a Vegan Diet."

■ In "SCAN Notables" in the spring issue of *PULSE,* **Suzanne Girard Eberle, MS, RD, CSSD,** and **Paul Goldberg, MS, RD, CSCS,** were inadvertently omitted from the list of esteemed dietitians who met Colorado Springs in November 2007 to promote sports dietetics.

If you have an accomplishment that you would like to be considered for in an upcoming issue of PULSE, please contact Michelle Barrack, MS, CSCS, at michellebarrack@gmail.com

2008 ADA Food & Nutrition Conference & Expo (FNCE)
October 25-28 Chicago, Ill.

SCAN Highlights:

■ Saturday, October 24
8 – Noon
SCAN PreFNCE Workshop

■ Sunday, October 25
5 – 7 pm
SCAN Reception

■ Monday, October 26
8 – 9:30 am
SCAN Priority Session
"Body Composition: Translating Science Into Action"

OF FURTHER INTEREST

■ SCAN's 2008-2009 Executive Committee Assembles

New SCAN elected officers and a new Executive Committee began their duties at the start of the current fiscal year, which began June 1, 2008 and will end May 31, 2009. Members of the 2008-2009 Executive Committee are as follows:

- ***Chair:*** Hope Barkoukis, PhD, RD
- ***Chair-Elect:*** Gale Welter, MS, RD, CSSD, CSCS
- ***Treasurer:*** Richard Hall II, MS, RD
- ***Secretary:*** Kelly White, MS, RD
- ***Past-Chair:*** Roberta Anding, MS, RD, CSSD, CDE
- ***Partnership Co-Directors:*** Julie Upton, MS, RD, and Jenna Bell-Wilson, PhD, RD, CSSD
- ***Member Services Director:*** Tara Coghlin-Dickson, MS, RD, CSSD
- ***Continuing Education Director:*** Pamela Nisevich, MS, RD
- ***Public Relations Director:*** to be announced
- ***Sports Dietetics USA Director:*** Michele Macedonio, MS, RD, CSSD
- ***PULSE Editor-in-Chief:*** Mark Kern, PhD, RD, CSSD

■ Introducing SCANNERS: New Nutrition Nuggets

SCAN is pleased to announce a new informational program: SCANNERS, which stands for Scientific, Concise, Authoritative, Nutrition Nuggets for Everyone's Reference Series.

SCANNERS is an ongoing series of special articles that will be inserted into *PULSE* and later made available on SCAN's Web site (www.scandpg.org). Each article is intended to provide authoritative, practical information that can help SCAN members in their practice. Visit SCAN's Web site for details on submitting topic ideas and being considered for authorship.

■ Contributors to "SD-USA Research Digest" Welcome

Here's an opportunity to read about the latest findings in sports dietetics and contribute to the pages of *PULSE:* The editors of *PULSE's* "Sports Dietetics USA Research Guide" (see pages 18 and 19 in this issue) are looking for those who would like to get involved by summarizing a recent article in the literature. For details, contact Stacie Wing-Gaia, co-editor of the research digest, at Stacie.wing@health.utah.edu.

■ ADA Task Force Provides Emergency Preparedness Toolkit

Many dietetics professionals are in need of assistance in determining their role in an emergency and developing an emergency preparedness plan for their office, department, or home. To fill these needs, the ADA House of Delegates (HOD) Emergency Preparedness Task Force has developed a member toolkit that includes a wallet card, tip sheets, and other useful information. Among other contents, the toolkit provides a list of Web sites that contain valuable data; information on how to enroll in a Federal Emergency Management Agency (FEMA) online educational program; description of the skills, knowledge, competencies, and roles for RDs and DTRs; and emergency response charts. More information can be found on the ADA Web site (www.eatright.org).

■ News from Sports Dietetics USA (SD-USA)

Here's an update on sports dietetics developments:

- ***Interested in the CSSD Credential?*** Consider enhancing your professionalism by earning the Board Certified Specialist in Sports Dietetics (CSSD) credential from the Commission on Dietetic Registration (CDR). To find out more about this valuable designation, view "Advance Your Career as a CSSD" on SCAN's Web site (www.scandpg.org); click "CSSD Promotion" under the Sports Dietetics tab. (Note: Viewing requires a Flash movie player, which can be downloaded for free at www.adobe.com).

- ***2008 and 2009 CSSD Examinations.*** Congratulations to all those who most recently earned the CSSD credential (See box on page 23).

  The last CSSD examination window in 2008 is July 14 to August 1 (the deadline for applications has now expired).

  The two 2009 CSSD examination windows are as follows: ***February 9-27*** (application postmark deadline is November 14, 2008) and ***July 13-31*** (application postmark deadline is May 1, 2009).

- ***CDR Sports Dietetics Self-Assessment.*** CDR has launched an online "Assess and Learn: Sports Dietetics: Nutrition for Athletic Performance" self-assessment module. The module has been approved for 5 continuing professional educational units (CPEUs). For information, visit http://cdrnet.org/products/product007.htm.

- ***SCAN's SD-USA Score.*** Sports dietetics practice is explored in the March 2008 issue of *SD-USA Score*, the e-newsletter provided free as a benefit of SCAN's SD-USA membership. The March issue focuses on CSSDs working at U.S. Olympic Training Centers. You can receive SCAN's *SD-USA Score* by joining SD-USA (see "Join SD-USA" on page 23). Past issues of the e-newsletter are posted on SCAN's Web site (www.scandpg. org) in the Members Only area.

If you have sports nutrition news and information to submit, please contact Amy Goodson, MS, RD, newsletter editor, at amygoodson@alumni. tcu.edu

• ***Standards in Development.*** Are you seeking to advance your career in sports dietetics and related areas? If so, you're invited to attend an open discussion about the future of sports dietetics practice, where you'll join members of SCAN who are developing Standards of Practice and Standards of Professional Performance (SOPs/SOPPs) for RDs in sports dietetics. This Open Space session will be held during the Food & Nutrition Conference & Expo (FNCE), October 25 to 28, 2008.

• ***Sports Nutrition at FNCE 2008.*** At the upcoming conference, plan to attend SCAN's session, "Female Athlete Triad and Body Composition Issues in Collegiate Sports: Case Studies from Male and Female Athletic Teams," presented by Ingrid Skoog MS, RD, CSSD, Oregon State University Athletics, and Randy Bird, MS, RD, CSSD, CSCS, University of Kansas Athletics.

• ***Sports RDs in the News.*** RDS in sports nutrition are as active in the media as they are on the field. You can read their interviews and articles on SCAN's Web site (www.scandpg.org) by clicking "Sports RDs in the News" under the Sports Dietetics tab.

• ***Sports Nutrition Workshops.*** "Nutrition & Exercise Workshop," presented by Nancy Clark, MS, RD, CSSD, and William Evans, PhD, is approved for 10 CPEUs. For information: www.sports nutrition workshop.com. It is also available as an online course.

"Sports Dietetics: Practiced, Proven & Tested," a preparatory workshop for the CSSD specialty exam and work as a CSSD, is approved for 4 CPEUs. For information: www.rkteamnutrition. net or Susan Kundrat at kundrat@nutrition onthemove.net.

"Sports Nutrition Playbook," focusing on nutrition, hydration, and supplements for athletes and active populations, is approved for 6 CPEUs. For information: www.rkteamnutrition.net or Michelle Rockwell at michellerock1@aol.com.

• ***New Resource.*** The Swiss Forum for Sport Nutrition offers a free Food Pyramid for Athletes at http://www.sfsn.ethz.ch/pyramid_en/index_EN.

• ***Join SD-USA.*** To receive the *SD-USA Score* e-newsletter and other benefits, join the growing ranks in SD-USA. Sign up for SD-USA—a free SCAN member benefit—via the Member Profile on SCAN's Web site (www.scandpg.org). Check the box labeled Sports Dietetics-USA at the bottom of the Member Profile.

Congratulations, New CSSDs

Congratulations to the RDs listed below who most recently earned the Board Certified Specialist in Sports Dietetics credential from the Commission on Dietetic Registration and can now include CSSD after their names:

Regina Barusevicius
Tricia Bland
Alicia Brown
Tracy Burke
Ruth Carey
Cecilia Davis
Jennifer Doane
Christine Doolittle
Mitzi Dulan
Hana Feeney
Amy Goodson
Sally Hara
Jane Jakubczak
Tammy Karni
Rikki Keen
Alicia Kendig
Charlotte Caperton Kilburn
Karen Konopelski
Carol Lapin
Amy Miracle
Paul Moore
Stephanie Nunes
Kimberli Pike
James Pulliam
Kristy Richardson
Matthew Sebastian
Leslee Sanders
Amit Sood
Justin Spies
Sharon Staier
Glen Tobias
Kristine Van Workum
Julie Vuksic
Rebecca Westereng
Kelly White

UPCOMING EVENTS

October 25-28, 2008
ADA Food & Nutrition Conference & Expo (FNCE), Chicago, Ill. ***SCAN Priority Session:*** "Body Composition: Translating Science Into Action." For information: www.eatright.org/fnce

November 6-7, 2008
Annual AICR Research Conference on Food, Nutrition, Physical Activity and Cancer, Washington, DC. For information: American Institute for Cancer Research, 202/328-7744; www.aicr.org

November 8-12, 2008
American Heart Association Scientific Sessions. New Orleans, La. For information: www.americanheart.org

November 13-16, 2008
Annual Renfrew Center Foundation Conference, "Feminist Perspectives and Beyond: The Power of Therapeutic Relationships in the Treatment of Eating Disorders." Philadelphia, Pa. For information: www.renfrew.org

April 16-19, 2009
Save the dates! Plan to join your SCAN colleagues at the ***25th Annual SCAN Symposium,*** "The Wonders of Wellness," at the Double Tree Hotel in Scottsdale, Ariz.

SCAN'S PULSE

Publication of the Sports, Cardiovascular, and Wellness Nutritionists (SCAN), dietetic practice group of the American Dietetic Association. ISSN: 1528-5707.

Editor-in-Chief
Mark Kern, PhD, RD, CSSD
Exercise and Nutritional Sciences
San Diego State University
5500 Campanile Dr.
San Diego, CA 92182-7251
619/594-1834
619/594-6553 - fax
kern@mail.sdsu.edu
Sports Editors
Kathie Beals, PhD, RD
Nanna Meyer, PhD, RD
Cardiovascular Editor
Satya Jonnalagadda, PhD, RD
Wellness Editors
Kristine Kuhnert, RD
Disordered Eating Editors
Charlotte McCormick, RD
Karen Wetherall, MS, RD
Conference Highlights Editor
Nancy Clark, MS, RD
Reviews Editor
Nichole Dandrea, MS, RD
Sports Dietetics USA Research Digest Editors
Nanna Meyer, PhD, RD
Stacie Wing-Gaia, PhD, RD
James Stevens, MS, RD
SCAN Notables Editor
Michelle Barrack, MS
Managing Editor
Annette Lenzi Martin
312/587-3781
312/751-0313 - fax
alenzi@attglobal.net

The viewpoints and statements herein do not necessarily reflect policies and/or official positions of the AMERICAN DIETETIC ASSOCIATION. Opinions expressed are those of the individuals authors. Publication of an advertisement in *SCAN'S PULSE* should not be construed as an endorsement of the advertiser or the product by the American Dietetic Association and/or Sports, Cardiovascular, and Wellness Nutritionists.

Appropriate announcements are welcome. Deadline for Winter 2009 issue: **Sept. 1.** Deadline for Spring 2009 issue: **Dec. 1.**

Manuscripts (original research, review articles, etc.) will be considered for publication. Guidelines for authors are available at www.scandpg.org. Email manuscript to the Editor-in-Chief; allow up to 6 weeks for a response.

Send change of address to: American Dietetic Association, 120 S. Riverside Plaza, Suite 2000, Chicago, IL 60606-6995.

Subscription cost for nonmembers: $50 individuals/$100 institutions. To subscribe: SCAN Office, 800/249-2875.

Copyright © 2008 by the American Dietetic Association. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission of the publisher.

To contact an editor listed above, visit: www.scandpg.org(click Nutrition Info tab, then "SCAN's PULSE")

Thrift-Remsen Printers
3918 South Central Ave.
Rockford, IL 61102-4290

PRESORT STANDARD
U.S. POSTAGE
PAID
Rockford, IL
Permit No. 2495