



Commentary

Spring 2010
Vol. 35

Commentary: “Lite” Reading from the Calorie Control Council

The Calorie Control Council (the “Council”) is an international association representing the low-calorie and reduced-fat food and beverage industry. Companies that make and use low-calorie sweeteners are among the Council’s members. Now, more than ever consumers are seeking diet and health information from credible and reliable sources. The Calorie Control Council serves as a reliable health information resource with experts available to assist with questions and concerns from consumers, health professionals, and the media.

Please use the Council as a resource when looking for information on low calorie and “lite” ingredients and the products that contain them. For more information, visit the Council’s website at www.caloriecontrol.org.



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Experts Weigh In

New Studies Caution Against Bias in Research Reporting

Two recent studies address the subject of bias in obesity research reporting. A new study, “White hat bias: examples of its presence in obesity research and a call for renewed commitment to faithfulness in research reporting” published in the January 2010 issue of the *International Journal of Obesity* demonstrates that a certain “white hat” bias may be present when it comes to obesity research. (“White hat” bias refers to the tendency to distort research findings if such distortion is perceived to serve good ends.) In this study, University of Alabama researchers examined ways in which scientists writing new research papers referenced two studies reporting effects of sugar-sweetened beverages on body weight. Results showed that less than one-third of the papers that cited the beverage studies accurately reported the overall results, and more than two-thirds overstated evidence that reducing sugar-sweetened drink consumption reduced weight or obesity. It also was reported that data was more likely to be published when it showed statistically significant outcomes, and when data did not show sugar-sweetened drinks to have the “desired” outcome, it was less likely to be published.

The authors state that the goal of finding improved methods (through research) to fight the obesity epidemic is important but note the passion inspired to fight a public health issue may cloud the judgment of some researchers and lead to misleading representation of data. In particular, they caution against implicating any particular food or food category as “causing” obesity. The authors concluded, “White-hat bias is a slippery slope that science and medicine need to resist; hopefully our study sounds a warning bell.”

Industry Studies of High Quality

In related news, an earlier article, “Industry

funding and the reporting quality of large long-term weight loss trials,” published in the *International Journal of Obesity*, analyzed the association of funding source and the quality of reporting (QR) of long-term clinical obesity trials. The researchers focused on these types of studies for two reasons: 1) because of the recognized negative health effects of obesity, and 2) the researchers noted, “Well conducted clinical trials are considered to be the fastest and safest way to find improved treatments and preventions.” Of 63 long-term weight loss trials reviewed, 67 percent of which were industry supported, the average QR score was significantly higher (i.e., better reporting) for industry-funded studies of overweight or obese individuals than for non-industry-funded studies. After limiting the analysis to only nondrug studies that were both relatively large and long term, the statistical significance decreased with the much smaller sample size, but the QR score was still higher for industry-funded research. The researchers noted, “For the scientific process to proceed effectively, it is important that all studies, both industry-funded and not, be reported with the highest quality possible...because it is through the comprehension of published research reports that the scientific community at large can judge the merits and import of the findings.”



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Studies Show Obesity Rates No Longer Expanding

Two recent studies conducted by the U.S. Centers for Disease Control and Prevention (CDC) revealed less than surprising statistics; 68 percent of adults and 32 percent of children are at least overweight. What did make headlines in a recent issue of the *Journal of the American Medical Association* is that the obesity rate in the U.S. appears to be leveling off.

Both studies examined trends in obesity from 1999 through 2008 and the current prevalence of obesity and overweight for 2007-2008. In the first study, 5,555 adults were surveyed using their height and weight measurements to calculate body mass index (BMI). Overweight was defined as a BMI of 25.0 to 29.9 and obesity was defined as a BMI of 30.0 or higher. The 2007-2008 study found 72 percent of men to be overweight, compared with 64 percent of women. However, a higher percentage of women were found

to be obese; 35.5 percent compared with 32.2 percent for men. Age, racial and ethnicity differences were also compared. The researchers noted, "For women, the prevalence of obesity showed no statistically significant changes over the 10-year period from 1999 through 2008. For men, results from the periods 2003-2004, 2005-2006, and 2007-2008 did not differ significantly from each other, suggesting the increases in the prevalence of obesity previously observed "may not be continuing at a similar level over the period 1999-2008, particularly for women but possibly for men."

In the second study, 3,281 subjects in the two-19 age group and 719 subjects in the birth-to-two years group were evaluated using the same protocols as in study one. The obesity rate for infants and toddlers in 2007-2008 was found to be 9.5 percent and 16.9 percent for two-through-19-year-olds. Overall, the researchers concluded that during the time period studied, the rate of obesity among children has plateaued, except among the very heaviest six-through-19-year-old boys.

What's New and What's True?

Low-Calorie Sweetener Allegations Unsupported; New Research Supports Benefits

Studies have recently surfaced alleging a link between low calorie sweeteners and weight gain which are misleading and ignore the weight of scientific evidence supporting their benefits. Findings from a review study, "Artificial Sweeteners: A systematic review of metabolic effects in youth," published in the January 2010 issue of the *International Journal of Pediatric Obesity* alleging that the "jury is still out" regarding the effects of low-calorie sweeteners on obesity, diabetes and glucose metabolism in children are not reflective of numerous published studies on this issue.

Interestingly, the article is based on just 18 studies out of a possible 116 from the researchers' initial literature search, and the authors do not discuss why the majority of the studies were eliminated (from the review process). Of the 18 studies reviewed, half were observational in nature and cannot show cause and effect. Only three of the remaining studies were randomized, controlled trials. The researchers acknowledged, "The strongest evidence for causation

between artificial sweetener use and either adverse or beneficial health effects comes from randomized controlled trials," going on to note the three controlled trials did *not* find an association between low-calorie sweetener consumption and weight change.

"In Principle" Animal Model Study Not Reflective of Human Studies

A second article, "High-intensity sweeteners and energy balance," published in the January 2010 issue of *Physiology and Behavior*, alleges a link between the consumption of low-calorie sweeteners and diet beverages and increased appetite and weight. The authors based their allegations on a small, short-term rat study in which the intake of foods and fluids sweetened with low-calorie sweeteners was compared to those containing glucose. In addition to the fact that what is applicable in the rodent model may not be applicable in humans, it is important to note the authors are asking questions that were resolved years ago. "Everything old is new again: similar studies on the uncoupling of sweetness and calories in humans were conducted back in 1989 – and to no great effect," noted Dr. Adam Drewnowski,

director, Center for Public Health Nutrition at the University of Washington, who has conducted research in the areas of low-calorie sweeteners, hunger, satiety and weight control.

The authors selectively report a study from 1996 by Blundell et al. to support their allegations. However, the authors fail to note that Blundell et al. failed to replicate these findings and published a study in 2007 showing that habitual users of sugar substitutes did not experience an increase in hunger. Also, the researchers suggest that a preabsorptive or “cephalic phase” insulin response, the body’s supposed reaction to non-caloric sweet taste, is a potential mechanism for overeating. According to health professionals, this reasoning is illogical because there is no cephalic phase insulin release in humans following the ingestion of low-calorie sweeteners, as demonstrated by Abdallah et al (1997) and not referenced

in this study. Further, the authors readily admit regarding their 2010 study, “However, it is always possible to

question whether any ‘in principle’ demonstration, obtained with an animal model, under well-controlled laboratory conditions, can shed light on factors that are currently promoting excess energy intake and body weight gain in the much more complex and uncontrolled human food environment.”

New Study Supports the Benefits of Low-Calorie Sweeteners

A new study published in the March 2010 journal, *Appetite*, provides added weight to the scientific evidence supporting the use of low-calorie sweeteners as part of an overall healthy diet in helping people control caloric intake and weight. The study concluded that low-calorie sweeteners do not increase hunger levels or cause people to eat more food. In fact, subjects who received the sugar substitutes consumed significantly fewer calories and there was no difference in hunger levels despite having fewer calories overall. The researchers, noted, “In conclusion, participants did not compensate by eating more at either their lunch or dinner meal and reported similar levels of satiety when they consumed lower calorie preloads containing stevia or aspartame than when they consumed higher calorie preloads containing sucrose.”

The study was conducted in both healthy and overweight adults and participants were given a pre-meal containing sucrose, aspartame or stevia. Those who received the stevia or aspartame consumed fewer calories overall, did not overeat and did not report increased feelings of hunger. This study also builds upon a recent 2009 meta-analysis (evaluating 224 studies) published in the *American Journal of Clinical Nutrition* and conducted by Mattes and Popkin. These researchers noted, “A critical review of the literature, addressing the mechanisms by which non-nutritive (low-calorie) sweeteners may promote energy intake, reveals that none are substantiated by the available evidence.”

Overall, the majority of scientific literature supports the use of low-calorie sweeteners and the products that contain them as part of an overall healthy diet. Further, leading health organizations such as the American Dietetic Association have found that sugar substitutes can be useful in helping people control their caloric intake.



Feed Your Mind

Educational Webinars Available

Stevia Webinar Online

A webinar entitled, “Stevia: A Naturally Sweet Alternative,” originally held in conjunction with the American Dietetic Association’s (ADA) Food and Culinary Professionals (FCP) and the Nutrition Education for the Public (NEP) Dietetic Practice Groups (DPG), is now available on Calorie Control Council web sites. The recording as well as the slides can be found by visiting the health professionals link on www.steviabenefits.org. Hope Warshaw, R.D., Dr. Claire Krueger and Dr. Mike Carakostas will lead viewers on an interesting and insightful journey about stevia and how it is being used today as a low-calorie sweetener. For more information about stevia, its safety and the approval process, log on now.

Upcoming Webinar Provides CE Credit

Another webinar, “From Bench to Broadcast: Putting Research into Perspective,” originally hosted by ADA’s Weight Management (WM) Dietetic Practice Group will be available in the coming months on www.caloriecontrol.org and www.aspartame.org.

With obesity and diabetes at epidemic proportions, practical, real world strategies related to weight and diabetes control must be provided to the general public to aid them in making better overall healthy lifestyle choices. However, many studies are taken out of context. Dr. Adam Drewnowski discusses the major differences between epidemiological and intervention studies and how these studies should be used in developing and making public health recommendations pertaining to weight control and diabetes. Dr. Drewnowski highlights the most meaningful data that can be gleaned from various study protocols.

Ms. Warshaw pinpoints recent media headlines related to weight control and diabetes and shows

how these headlines can spin out of control, many times due to data misinterpretation. As opposed to motivating the public, many consumers are left questioning the “right” dietary habits. Ms. Warshaw provides examples (as part of case studies) of how health professionals can better evaluate new and emerging studies and put these studies into proper context while communicating meaningful, scientifically based messages.

Dietitians who view the webinar and complete the necessary requirements will receive continuing education credits.

More about the Speakers:

Dr. Michael Carakostas is a Senior Consultant with ToxStrategies, a scientific consulting firm, where he leads the Food and Supplement Safety Practice. He is a board certified veterinary clinical pathologist who has held full-time faculty appointments at several US veterinary schools as well as safety assessment and research positions in the food, drug and chemical industries. Dr. Carakostas has extensive experience in food ingredient safety assessment, food regulatory affairs and the management of risk and communication issues related to food safety. He has also held a number of scientific and regulatory leadership positions in organizations such as the International Life Sciences Institute, International Food Information Council and The Calorie Control Council.

Dr. Adam Drewnowski is a world-renowned leader in innovative research approaches to the prevention and treatment of obesity. Dr. Drewnowski is Director of the Nutritional Sciences Program and Professor of Epidemiology and Medicine at the University of Washington in Seattle. He also serves as Director



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of the Center for Public Health Nutrition and the UW Center for Obesity Research. Dr. Drewnowski's current research is focused on the relationship between poverty and obesity and the links between obesity and diabetes rates in vulnerable populations and access to healthy foods.

Dr. Claire Kruger has more than 20 years experience as a toxicology consultant, focusing on foods, consumer products and pharmaceuticals, providing scientific, regulatory, and strategic support to clients around the world. In 2007, Dr. Kruger was elected to the Spherix Incorporated Board of Directors where she currently also serves as Chief Executive Officer and Director of Health Sciences. Her clients include food, drug, and dietary supplement manufacturers,

agricultural producers, biotechnology companies, trade associations, and law firms.

Hope Warshaw, MMSc, RD, CDE, BC-ADM, applies nearly thirty years of expertise as a dietitian and diabetes educator in her work translating nutrition and diabetes research into common sense advice as an author, freelance writer, and consultant. Ms. Warshaw has authored numerous consumer articles and books about healthy restaurant eating and diabetes nutrition management. She has served as chair of the American Dietetic Association's (ADA) Diabetes Care and Education dietetic practice group and currently is a member of an ADA Evidence Analysis project on caloric and non-caloric sweeteners.

Sweet Substitutes

Ludwig Commentary "Not So Sweet" for Science

A commentary, "Artificially Sweetened Beverages - Cause for Concern," published in the *Journal of the American Medical Association* in December 2009, is particularly critical of low-calorie sweeteners in diet beverages. Author Dr. David Ludwig selectively uses references to support his theory that when consumed alone, diet drinks may disrupt the hormonal and neurobehavioral pathways regulating hunger and satiety by producing a dissociation between sweet taste and calorie intake. Dr. Ludwig's commentary relies on epidemiology studies (which cannot show cause and effect) to support his allegations, as well as a study involving approximately 10 rats per group. Although he does cite a recent meta-analysis, (Mattes and Popkin, *American Journal of Clinical Nutrition*, 2009) regarding intake data, he fails to cite the following as noted by Mattes and Popkin, "A critical review of the literature, addressing the mechanisms by which non-nutritive sweeteners may promote energy intake, reveals that none are substantiated by the available evidence."

Further, Ludwig fails to mention a study, published in the *International Journal of Obesity* in July 2009, which evaluated the dietary habits of more than 300 individuals. The researchers concluded, "Our

findings...suggest that the use of artificially sweetened beverages may be an important weight control strategy among WLM (weight loss maintainers)."

Notes Dr. Adam Drewnowski, director, Center for Public Health Nutrition at the University of Washington, "Consumers find it difficult to know who to believe. In the final analysis, all health experts agree that weight loss is best achieved by a combination of reducing caloric intake, lowering energy density of the diet, and increasing physical activity. By all accounts, low-calorie sweeteners do help. Suggesting that low-calorie sweeteners actually cause people to gain weight is an irresponsible direct application of rat models to dietary counseling and to public health."



Get Physical

“Let’s Move” to Fight Childhood Obesity

The Obama Administration’s new campaign to fight childhood obesity is a wake-up call for Americans to evaluate their lifestyles in an effort to improve the eating and exercise habits of both themselves and their families. The “Let’s Move” campaign, initiated by Michelle Obama, has four goals:

- Helping Parents Make Healthy Family Choices
- Serving Healthier Food in Schools
- Accessing Healthy, Affordable Food
- Increasing Physical Activity

As mentioned earlier, nearly one in three U.S. children are either overweight or obese, and fully two-thirds

of U.S. adults fall into the same category. Obese children are at greater risk for many health conditions including cardiovascular disease, asthma, joint problems, diabetes, depression and liver disease, than children who are not obese, according to the

Centers for Disease Control and Prevention (CDC).

Unfortunately these conditions are likely to follow them into adulthood as obese children and adolescents have a greater chance to become obese as adults. A 2009 study conducted by the CDC revealed the startling statistic that the

annual health costs of obesity in the United States are approximately \$147 billion. “The physical and emotional health of an entire generation and the economic health and security of our nation is at stake,” said Mrs. Obama as part of an interview with the *Chicago Sun Times*. “This isn’t the kind of problem that can be solved overnight, but with everyone working together, it can be solved. So, let’s move.”

Get Moving: Family Style

The American Heart Association recommends that children and adolescents engage in at least 60 minutes of moderate to vigorous physical activity every day for good health and a healthy body weight. This may seem like a daunting goal but consider that 8-18 year-olds spend an average of 7-1/2 hours per day on one screen or another, enjoying TV, computers, video games, cell phones and movies, according to www.letsmove.gov. If a child doesn’t have an hour to exercise all at once, two 30-minute segments or even multiple 10-minute periods of age-appropriate exercise can be just as effective.

Experts agree that the most effective way to treat and prevent childhood obesity is to make the approach a family affair. Gradual changes are easiest to incorporate into the daily routine, in terms of both diet and exercise, and are easiest to maintain long term. Building physical activity into the family routine is good for everyone and will keep exercise from being a chore. Start by making small changes such as taking a walk after dinner or a family bike ride instead of turning on the TV. A study published in the March 2010 journal, *Health Affairs*, indicates a child has a 41 percent greater chance of becoming overweight or obese if there is a TV in his/her bedroom or if the child watches more than two hours of television a day. Including children in active chores, such as washing the car or walking the dog, can be fun and minimizes sedentary activity. For information on the calories burned with various types of exercise, enter exercise in the Get Moving! Calculator at: www.caloriecontrol.org. Encouraging the entire family to become more active will eventually make new habits routine and increase the odds of the overweight child achieving a healthy weight.

More information on the “Let’s Move” campaign is available at: www.letsmove.gov.

