



## PRODUCE FOR BETTER HEALTH FOUNDATION

### **Produce for Better Health Foundation** **Backgrounder—Low-Carbohydrate Diets** **October 2003**

Low-carbohydrate diets—to the degree that they restrict fruit and vegetable intake—are unhealthy because they restrict the intake of important health-promoting nutrients, fiber and phytochemicals. In the constant quest for weight loss, Americans have lately turned more toward low-carbohydrate diets. At present, there is no published scientific evidence that these diets are more effective in producing long-term weight loss than adopting healthy eating habits. There is, however, an overwhelming body of scientific evidence in support of the relationship between fruit and vegetable intake and health. With science touting the emerging health benefits associated with phytochemicals, and with the numbers of overweight/obese children and adults growing at an alarming rate, it is important now, more than ever, to embrace healthful eating accompanied by appropriate physical activity. Including 5 to 9 servings of nutrient-dense, colorful fruits and vegetables in an overall diet which is low in saturated and trans fat, and encourages whole grain intake, is the proper foundation upon which to build and maintain health. (1)

#### **Rationale**

Obesity is a glaring public health issue in our country today. According to the Centers for Disease Control and Prevention (CDC), approximately 64% of Americans are now officially classified as overweight or obese, and the trend is moving upward. (2) In addition, the statistics for childhood overweight have increased from 11% to 15% in the years between the National Health and Nutrition Examination Survey (NHANES) III (1988-94), and the 1999-2000 NHANES. (2)

This is a nation where less than 20% of individuals consume a minimum of 5 servings of fruits and vegetables per day. (3) Because of this, the vast majority of Americans miss the benefits that fruits and vegetables provide in helping to maintain a healthy weight and reducing the risk of diabetes, heart disease, high blood pressure, and several types of cancer. While Americans might not focus on their risk for chronic disease, they are very aware of their perceived body image. So much so, that they are drawn to a quick fix in order to lose weight. This is evident based on the strong renewed interest in the low-carbohydrate diets of the 70's, which have been on the best seller list for many years.

When evaluating some of the most popular low-carbohydrate diets on the market, a common thread emerges: the insulin-obesity connection. Insulin is a hormone that allows for the uptake of glucose (digested carbohydrate) into the cells for energy. Proponents of these diets suggest a connection between high-circulating levels of insulin in the blood and the “unavoidable” storage of glucose as fat in the body. Because glucose is the result of carbohydrate metabolism, these diets label all or many

carbohydrates as “bad” and discourage their consumption. In fact, low-carbohydrate diets restrict or eliminate foods such as fruits and vegetables, and many then encourage the use of supplements. However, supplements do not provide the synergistic benefits of whole foods. There is a growing body of evidence that supports the fact that nutrients and other food compounds, when working together, provide for a greater health benefit than they would individually as a supplement. (4) By denouncing carbohydrate in general, without respect to fruits, vegetables and whole grains, a huge disservice is done to the consumer, and their health can be negatively affected because of it. In contrast to the low-carbohydrate diet theory, there is ample evidence of the health benefits of diets rich in fruits, vegetables and whole grains, and low in saturated and trans fat. (5-7)

There is a need to differentiate between refined carbohydrates and fiber-containing, nutrient-dense, low-calorie fruits, vegetables and whole grains. Many low-carbohydrate diets restrict or eliminate fruits and vegetables based on the concept of “glycemic index.” The glycemic index (GI) is a number that identifies how quickly a specific amount of carbohydrate from a food will affect blood sugar levels. Theoretically, the higher the number, the faster it will cause a spike in the blood sugar, necessitating an insulin response. One problem with GI is that foods aren’t always eaten individually. When foods are eaten together as a meal, the GI is reflective of the components of that meal.

Most fruits and vegetables have a low GI; however, some end up on lists of “foods to avoid” because their GI is considered too high. To keep this in perspective, it is important to know that in general, all fruits and vegetables have a low *glycemic load*, which is defined as GI multiplied by carbohydrate content. (8) This means that fruits and vegetables do not contain much CHO and therefore are unlikely to adversely impact blood sugar management. Fruits and vegetables as snacks are nutrient-packed and contain fiber and phytochemicals that are of great benefit in an overall healthy diet.

The American Diabetes Association, citing insufficient scientific evidence, does not endorse the use of GI in choosing foods to control blood sugar. (9) Many health professionals also dispute GI and the insulin-obesity connection, and rather support the theory of energy balance. Simply put, you will gain weight if you take in more calories than you expend. Substituting fruits and vegetables for high calorie foods is a great way to reduce calorie intake without feeling deprived.

With overweight and obesity as strong risk factors for many chronic diseases, it is evident that Americans are in the middle of a health crisis. The cost of treating obesity in the year 2000 was an astronomical \$117 billion. (2) With solid scientific evidence supporting the benefits of fruit and vegetable intake in maintaining health and preventing many chronic diseases, and the burgeoning role that their phytochemicals play in that regard, the elimination of appropriately prepared fruits or vegetables from the American diet has the potential to adversely affect health.

### **On-going Research**

*It is acknowledged that new studies on this timely subject will likely abound. The Produce for Better Health Foundation will keep abreast of all research in this area and, will update this background as deemed appropriate.*

## Other Nutrition/Health Related Organizations “Weigh In” On Low-Carbohydrate and/or Fad Diets

### American Dietetic Association (ADA)

[www.eatright.org](http://www.eatright.org)

The 70,000 member strong organization of food and nutrition professionals reiterated, after the two NEJM studies came out in May 2003, that “there is no magic bullet to safe and healthful weight loss.” (10) A previous position statement on weight management to improve overall health endorses “a lifelong commitment to healthful lifestyle behaviors emphasizing sustainable and enjoyable eating practices and daily physical activity.” (11) They acknowledge that dietitians’ biggest challenge is to “teach persons how to be healthy without restriction and deprivation and to reverse the distorted cognitions regarding food as ‘good’ or ‘bad’.” ADA states they continue to recommend an eating plan based on complex carbohydrates (whole grains, fruits and vegetables), moderate in protein and relatively low in fat, coupled with physical activity for lifelong weight management.

### American Heart Association (AHA)

[www.americanheart.org](http://www.americanheart.org)

The AHA has “declared war” on fad diets in part because some have falsely claimed to have earned AHA’s endorsement. They too maintain that there are no “magic formulas” for weight loss. With regard to high protein/high fat (low carbohydrate) diets, they remain especially concerned that these diets are too high in fat and saturated fat, and will lead to increased risk for heart attack and stroke. (12) AHA warns that weight loss recommendations should be “based on carefully controlled, long-term scientific studies by independent scientists and physicians.” They have created guidelines to use when evaluating a weight loss/management program, and have also developed the Eating Plan for Healthy Americans, which strives to help people achieve a healthy eating pattern. (13)

### American Institute for Cancer Research (AICR)

[www.aicr.org](http://www.aicr.org)

The AICR spends a great deal of effort trying to combat the misinformation put forth by popular low-carbohydrate diets. A recent study they conducted shows that most Americans believe weight management is a matter of what you eat rather than how much you eat. Their big concern is that “the ‘all or nothing’ approach to carbohydrates is too simplistic and potentially dangerous.” (14) AICR recommends expending more calories than are consumed for weight loss, and that meals be comprised of 2/3 plant-based foods, and 1/3 animal protein for a healthful diet.

International Food Information Council (IFIC)

[www.ific.org](http://www.ific.org)

IFIC warns to “look before you leap” where fad diets are concerned, because they offer the quick-fix or magic bullet as a weight loss strategy, and then end up falling short. A major concern is the lack of concrete scientific research to support the claims popular diets are making. IFIC claims that low-carbohydrate diets are, “nothing more than low calorie diets in disguise, but with some potentially serious consequences.” (15) They have put together some Tips for Spotting Fad Diets in an attempt to help people evaluate potential weight loss plans. (15)

Center For Science in the Public Interest (CSPI)

[www.cspinet.org](http://www.cspinet.org)

In November 2002, CSPI devoted its *Nutrition Action Health Letter* cover story to exposing inaccuracies in the reporting of the July 7, 2002 New York Times Magazine article by Gary Taubes, “What if Its All Been a Big Fat Lie?” (16) Many of the top names in the nutrition and obesity fields who were interviewed for that article felt it was misleading and left the impression that they supported the Atkins diet. CSPI used their November issue as a forum for those experts to discuss their quotes in the context they were intended, and to challenge the major claims Taubes made in the original article. In the end, they clarified that most nutrition/obesity experts agree on: cutting saturated and trans fats, not overdoing carbohydrates (type matters), and looking for a weight loss strategy that works for you.

*This backgrounder has been reviewed by Dr. Barbara J. Rolls, Guthrie Chair and Professor of Nutritional Sciences, The Pennsylvania State University. Dr. Rolls is a leading researcher in the field of obesity and sits on the Research Advisory Board for the Produce for Better Health Foundation.*

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