

Research Reaffirms Role of Complex Carbohydrates in Weight Loss

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Experts at the *American Institute for Cancer Research* are reminding people of one piece of common sense that seems to have grown less common during the recent “low-carb” craze: Vegetables, fruits, whole grains and beans are a major ingredient in any weight loss strategy.

“People used to assume that to lose weight, you learn to eat a little more plant foods and a little less fatty foods. The focus on short-term diets seems to have obscured this long-term strategy, but two reviews of research on weight loss have recently emerged to remind us of what used to be obvious,” says AICR’s Director of Nutrition Education **Melanie Polk, R.D.**

According to these two timely studies, “energy density” is the key concept to understanding the efficacy of plant foods in regard to weight loss. Most plant foods are high in water and fiber, but comparatively low in energy—or calories. Thus they create a feeling of fullness without delivering the hefty load of calories delivered by foods higher in fat. “Because of their low energy density, substituting vegetables, fruits, whole grains and beans for fatty foods with high energy density will help in weight management. Along with eating smaller portion sizes and increasing physical activity, this strategy should lead to gradual and sustainable weight loss,” Polk says.



Public Seeks New Strategies After “Low Carb” Diets

AICR is issuing this statement now because a series of surveys and articles indicate that the “low-carb” diet fad peaked last winter and has been losing its following during this past summer. According to a study published by NPD Group, Inc., the number of Americans following “low-carb” diets hit a high of 9 percent in February 2004 and then fell to 6 percent by June.

Another survey conducted by InsightExpress Inc. indicates that half of the Americans who have tried “low-carb” diets have given them up. The same study shows that the number of people trying them for the first time is shrinking.

Even the Grocery Manufacturers of America, which represents many of the food processors who tried to cash in on the fad with new “low-carb” products, sees interest in these items fizzling out. “Both anecdote and statistics indicate that ‘low-carb’ items aren’t drawing the way they used to,” spokesman Michael E. Diegel says.

Most Americans simply rejected “low-carb” diets. Others found that they didn’t work for them. Still others lost weight on them, but gave them up because they were too restrictive or caused side effects such as irritability, sleeplessness, or digestive disorders.

“Many people are asking, ‘What now?’ The answer is to come back to common sense. Eat a balanced diet weighted toward vegetables and fruits, reduce portion sizes and increase physical activity. This prescription is not a miracle diet with major food groups banished and promises of pounds lost in days. It is a sensible way of living that leads to gradual and sustainable weight loss,” Polk says.

Accumulated Research Suggests Plant Foods Help

Since the mid-eighties, research results have accumulated suggesting that consumption of vegetables and fruits is a useful tool for weight management. These studies have fallen into three categories: short term trials that provide meals to subjects, long term trials that provide meals and trials that simply offer dietary advice to subjects.

Short Term Trials

In the first category, researchers measure what happens when scientists provide meals for a group of subjects, but secretly change the percentage of fat and complex or unrefined carbohydrates in those meals.

In such studies, some subjects eat meals high in fat and low in complex carbohydrates—that is energy dense meals that are packed with fat and calories and low in fiber and water. Others eat meals that are low in fat and high in complex

carbohydrates—that is, filled with fiber and water that dilute their energy density.

Researchers observed that it was simply the amount of food eaten by subjects that determined how full they felt and how long they stayed full. More significantly, even though they felt the same degree of fullness, subjects who ate a given amount of energy-dense, high-fat meals ended up consuming more calories than subjects who ate the same amount of low-energy dense, high-carbohydrate meals.



Long Term Trials

Once it was demonstrated that simple adjustments to the fat-to-carbohydrate ratio of meals could have such a clear impact on total caloric intake, researchers began wondering if making such adjustments over a longer period of time could have measurable effect on weight loss.

This possibility was investigated in two long-term clinical studies that provided meals to small groups of overweight subjects over the course of three weeks. Subjects ate meals that were much higher in vegetables and fruits and lower in fat than their habitual diet. At the end of both trials, they showed significant weight loss—in one trial an average of 17.2 pounds.

Trials that Rely on Dietary Advice Alone

Results are not as pronounced in studies in which subjects are merely advised to make healthy adjustments to the energy density of their meals. These trials tend to last for years instead of weeks and involve larger numbers of subjects. Yet average weight loss for such trials is 8 or 9 pounds.

This relatively weak result may be due to complicating factors that are difficult for

scientists to control, such as the many emotional and psychological aspects of eating. There are also many methodological differences among these studies. Some trials advise subjects to increase vegetable and fruit consumption without telling them to make other changes in their diet. Some instruct subjects only to lower consumption of fat, and still others combine these and other recommendations.

In addition, not all of the published clinical trials that have asked subjects to make such healthy adjustment to their diets specifically studied weight loss. Many were devised to track cholesterol levels or blood pressure. In these trials, weight loss tended to be lower.

Reviews Clarify Research Results

In regard to the role of complex carbohydrates in weight management, a large body of research studies with different designs and varying results has accumulated. In such cases, scientists resort to a review procedure that weighs and assesses the evidence to draw conclusions. Two such reviews were published in 2004.

In an article published in *Nutrition Review* in January, Dr. Barbara Rolls and associates reviewed 34 intervention studies relating to how vegetable and fruit consumption effects satiety, energy intake and body weight. On the basis of this review, they conclude that “fruits and vegetables may play an important role in weight management.”

Dr. B.A. Swinburn and his colleagues reviewed more than 200 studies relating to causes of obesity and strategies to reduce it. Seventy of these studies related to the role of foods high in fiber and foods high in fat. Careful evaluation of these studies led to the conclusion that high intake of foods with fiber is protective against obesity.

Based on this review, the WHO report, *Diet, Nutrition and the Prevention of Chronic Disease*, states that “a high intake of non-starch polysaccharides (NSP)/dietary fiber promotes weight loss.” It also identifies whole grain cereals, fruits and vegetables as the preferred sources of NSP.

Similarly, based on its own appraisal of the research and these reviews, the USDA Dietary Guidelines Advisory Committee’s report issued in August states “increased consumption of fruits and vegetables may be a useful component of programs designed to achieve and sustain weight loss.”

On the basis of these reviews and statements, AICR will reaffirm in all its educational materials and programs the efficacy of substituting complex carbohydrates for more energy dense foods in order to reduce weight. The strategy is viewed as one of several effective tools to fight overweight and obesity.

Making Complex Carbohydrates Work for You

Besides confirming the role of vegetables and fruits in weight management, the research also suggests that outside of a controlled scientific situation it may be difficult for people to consistently increase consumption of plant foods. Traditional eating patterns, restaurant and fast food offerings and mainstream food marketing tend to favor diets high in meat, dairy and fat-laden pastry over vegetables, fruits, whole grains and beans.

“Furthermore, simply adding servings of vegetables and fruits to your diet may foster long-term health, but it won’t necessarily help with weight management. To see gradual and sustainable weight loss, low energy density foods should be substituted for some high energy density foods,” Polk says.

A strategy recommended by AICR involves focusing on the proportion of foods on the plate meal by meal. A good rule of thumb is to fill your plate 2/3 (or more) with vegetables, fruits, whole grains and beans and 1/3 (or less) animal protein.

According to Polk that might mean serving yourself two vegetables and a whole grain like brown rice or kasha and reducing the size of your energy-dense meat dish to make room for the plant foods. Or it could mean preparing a one-pot meal—stew, stir fry, casserole, or dinner salad—that is 2/3 vegetables and grains and 1/3 meat, poultry, or fish.

“This strategy does not require eliminating any of your favorite foods. Instead just shift the proportion of foods on your plate so that you fill up on low energy density items and savor just a little less of the high energy density foods,” Polk says.

AICR’s brochure, “[The New American Plate](#),” offers pointers on how to manage proportion and portion size meal by meal for long-term health and a healthy weight. It can be downloaded from the AICR web site, www.aicr.org. Or call toll-free 1-800-843-8114, ext. 460, 9 a.m.-5 p.m., Eastern Time, Monday through Friday to order a single free copy.

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Editor’s Note: For an annotated discussion of the relevant research regarding the role of complex carbohydrates in weight management, go to www.aicr.org.

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The American Institute for Cancer Research (AICR) is the nation's third largest cancer charity, focusing exclusively on the link between diet and cancer. The Institute provides a wide range of education programs that help millions of Americans learn to make dietary changes for lower cancer risk. AICR also supports innovative research in cancer prevention and treatment at universities, hospitals and research centers across the U.S. The Institute has provided over \$68 million in funding for research in diet, nutrition and cancer. AICR's Web address is www.aicr.org. AICR is a member of the World Cancer Research Fund International.