

Weighing In on the Current Weight Loss Debate

Written by Jeff Novick, M.S., R.D.
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With nearly two out of every three American adults now either overweight or obese and cardiovascular disease (CVD) remaining the #1 killer of Americans, there is growing debate about what is the best way to eat to lose weight, to prevent weight gain and to also reduce the incidence of CVD. In the last few years, the media, the lay press and a growing number of researchers have jumped on the bandwagon promoting low-carbohydrate diets as the best way to lose weight. In addition, two new studies recently appeared in the *New England Journal of Medicine* that evaluated these low-carbohydrate diets for weight loss. One study was by Gary Foster, Ph.D., et al and lasted a year. The other study, which lasted six months, was by Frederick F. Samaha, M.D., et al. Many of the media and press reports on these studies are reporting that the studies showed very favorable results for the low-carbohydrate diet, vindicating the advocates of them. But is this what the results really showed? Has Atkins really been “vindicated?”

Let us take a closer look.

The good news for proponents of the “low-carbohydrate” diets (like the Atkins diet) is that these two new studies did find that the subjects who were following the “low-carbohydrate” diet did initially lose significantly more weight than those on the “high-carbohydrate” diet. In both studies, at the end of six months, those following the “high-carbohydrate” diet, similar to the diet advocated by

the American Heart Association (AHA), did not lose as much weight as those following the “low-carbohydrate,” Atkins-style diet. However, the Foster study continued for another six months and, by the end of the year, those assigned to the low-carbohydrate diet regime had already regained much of the weight and there was no longer any significant difference in

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weight loss between the two diets.

One problem with these studies is that they reported that CVD risk factors (lower triglycerides and higher HDLs) appeared to have improved more on the low-carbohydrate Atkins diet than the AHA- style, “high-carbohydrate” diet. However, lower triglycerides and higher HDLs usually occur whenever excess weight is lost. So, the benefit to the CVD risk factors may be more from the lost weight, than from any specific composition of the diet.

Another problem with the Foster study was that by the end of the year, 40% of those in the Atkins diet group had dropped out of the study. This was also true of the Samaha study that lasted only six months. When they measured ketones (a marker of compliance to a low-carbohydrate diet), most of those still claiming to be following the low-carbohydrate diet were now eating enough carbohydrates to stop producing ketones. This proves they were not really on the Atkins diet any more. Compliance and adherence was so poor that one wonders why such results were published in a prestigious medical journal like the New England Journal of Medicine (NEJM).

Are the Foster study and the Samaha study the best ones comparing a “low-carbohydrate” diet to a “higher-carbohydrate” diet? Maybe not.

First, realize that the “higher-carbohydrate” diets used in these studies should not be viewed as a healthy high-carbohydrate diet although this is how they are being portrayed in the popular press. Nor are they similar to the healthier, lower fat, higher-carbohydrate diet recommended by Dean Ornish, the Pritikin Longevity Center, Dr. Fuhrman’s Eat To Live, or the long-standing dietary recommendations of the National Health Association. In the studies, the higher-carbohydrate groups were still consuming 33% of their calories from fat. The high-protein groups consumed about 41% of their calories from fat. So, these so-called higher-carbohydrate diets used in these two New England Journal of Medicine studies weren’t really much lower in fat than the “high-protein” diets they were compared to. They were much more than the conventional high-carbohydrate diet of mainstream America, full of calorie-dense, refined carbs like white bread and other processed foods.

There is a yearlong study conducted by Dr. Fleming that did a better job at comparing the different diets. Like the latest two New England Journal of Medicine studies, Fleming also

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compared the Atkins-style diet to an AHA-style “higher-carbohydrate” moderate-fat diet. And he did a much better job at getting people to actually stick with the diets for the whole year. At the end of the year, he found that on average, all CVD risk factors were in fact worse despite the fact that those on the Atkins-type diet lost about 13% of their initial body weight. Like the two NEJM studies, Fleming also showed the AHA-style “higher carbohydrate,” moderate-fat diet produced significantly less weight loss than the Atkins diet. However, Dr. Fleming’s study didn’t just compare an Atkins-style diet to an AHA-style diet. Fleming also compared the Atkins diet with a very low-fat, near-vegetarian diet like that advocated by the Pritikin Longevity Center and Dr. Ornish. On the very low-fat diet, Fleming found a dramatic improvement in all CVD risk factors tested after one year. He also found that the very low-fat style diet also produced the most weight loss with an average weight loss of over 18% of initial body weight, which was more than the 13% weight loss found in the Atkins-type diet group.

In regard to weight loss, we know that anyone can lose weight on any diet, as long as they create a calorie deficit, and people have been proving that for many years on all kinds of crazy diet fads that have come along. While it may seem hard to believe on an Atkins-type diet that you consume fewer calories, several studies have actually proven that. Additionally, a large review of all the studies (2600) ever written since 1960 on the Atkins diet, just published in the Journal of the American Medical Association, concluded that weight loss on Atkins was associated primarily with decreased calorie intake, and not with reduced carbohydrate content. The reviewers, from Stanford University School of Medicine, also concluded that there was insufficient evidence on the safety or long-term efficacy of an Atkins-style diet.

Another study published last year showed that before starting the Atkins-type diet, the subjects consumed around 2400 calories per day. In the first two weeks of following the Atkins-type diet, their caloric intake dropped to 1400 calories per day. During the second two weeks, the caloric intake was 1500 calories. The weight loss in the subjects was due to reduced caloric intake and not due to the change in the composition of the diet.

So, all diets work for some time. Eat less calories than you burn, and you will lose weight. That is not the question. Any diet that just temporarily cuts calorie intake will result in weight loss, but weight loss based on reduced calories and deprivation can often eventually lead to increased hunger which can lead to an increase in calorie intake and weight gain in the long run.

The real question is: “Is it possible to lose weight over the long-term without hunger and improve your health?”

The answer is a resounding, “Yes!”

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The National Weight Control Registry (NWCR) is an ongoing study that is answering this question. They have been tracking real, live people who have successfully lost at least 30 pounds and have kept it off for at least a year and can medically document these results. Over 4500 people have now met these criteria. The average weight loss of these 4500 people is 65 lbs. and the average length of time the weight loss has been maintained is six years. By far the majority of these long-term weight control success cases utilized a diet considerably higher in carbohydrate and much lower in fat than the average American diet and included lots of exercise. The average fat content was 23% with 1/3 of the subjects (about 1500) following a diet that had less than 20% fat. By contrast, only a very small percentage of these long-term weight loss successes (less than 1%) have used the very low-carbohydrate approach advocated by Atkins and others. Diets such as “Enter the Zone” and “Sugar Busters” also restrict the percent of calories from carbohydrates to 40% or less of total calories. However, as the JAMA and the NWCR studies have shown, there are also few, if any, documented cases of long-term weight control on these more carbohydrate restrictive diets.

Is there any more evidence of the viability and success of the higher-carbohydrate, “low-fat” diet?

A recent study by Dr. Bowman evaluated the diets of a representative sample of U.S. adults whose customary diets varied in the amount and percent of calories from carbohydrate. The data used came from the USDA’s Continuing Survey of Food Intakes by Individuals 1994-1996. The sample included over 10,000 free-living adults and divided them into four groups according to the percent of carbohydrate calories in their diets: 1) a very low-carbohydrate diet group (less than 30% of calories from carbohydrates); 2) a low-carbohydrate group (30%-40% of calories from carbohydrates); 3) a moderate-carbohydrate group (45%-55% calories from carbohydrates); and, 4) a high-carbohydrate group (more than 55% of calories from carbohydrates). Compared to the other three groups, the subjects in the high-carbohydrate group consumed 200-300 fewer calories each day and the men and women in this group were far more likely than the other groups to have normal body weights, that is, body mass indexes below 25. The men and women in the very low-carbohydrate group, by contrast, were the heaviest. Over 65% of the men and over 50% of the women were overweight or obese.

The most interesting point of the study by Dr. Bowman was that she noted that it is not so much the ratio of macronutrients (fat to protein to carbohydrate) in the diet but rather the “calorie density” of the diet that most influences calorie intake. Simply put, the reason that people consuming the diets with the highest percentage of carbohydrate consumed fewer total calories than those eating the most fat and protein is that the high-carbohydrate eaters diets had the lowest “calorie density.” Calorie density is a measure of the concentration of calories in food. So, even though the people consuming the higher-carbohydrate diets consumed fewer calories, they didn’t consume a lesser “amount” or “weight” of food. All groups consumed a similar

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amount (weight) of food per day. The best foods for promoting weight loss turn out to be those with the lowest calorie density and these are the foods that usually have a higher water and/or fiber content. Unrefined carbohydrates, like fresh vegetables, fresh fruits, starchy vegetables, whole grains, and legumes have the most water and fiber and the lowest calorie density. Foods that are high in fat, sugar and refined carbohydrates usually have the least water and fiber and the highest calorie density. So, this means that you can eat more of these high fiber, high water content foods and less of the calorie dense foods that are usually high in fat, sugar, and/or refined carbohydrates, without gaining weight.

The lower-carbohydrate diets also had far more saturated fat, cholesterol, and salt on average than the diet highest in carbohydrates. Diets higher in saturated fat, salt and cholesterol promote CVD. The lower-carbohydrate eaters also consumed less fiber and lower levels of most vitamins and minerals than those eating the most carbohydrate calories. The authors of this study conclude, "A study of diets of free-living adults in the U.S. showed that diets high in carbohydrate were both energy restrictive and nutritious and may be adopted for successful weight management." [Bowman SA, Spence JT. A comparison of low-carbohydrate vs. high-carbohydrate diets: Energy restriction, nutrient quality and correlation to body mass index. *J Am Coll Nutr* 2002; 21:268-74].

There is also another study called the PREMIER trial that taught people with high cholesterol levels to follow a low-fat, high-carbohydrate diet. The diet was similar to the DASH diet that has been shown to successfully lower blood pressure. This diet did allow some low-fat dairy, two to three servings of "healthy fats" per week, and used plant sterol enriched margarine and psyllium husks to lower cholesterol levels. The subjects were able to follow this PREMIER diet for a year, making significant changes in what they ate. As a result they reduced their weight, their blood pressure, and their cholesterol and other risk factors for CVD. The PREMIER diet was a low-fat, high-carbohydrate diet.

In March 2003, in a 116-page report from the World Health Organization, the world's foremost nutrition experts concluded that the best diet for curbing runaway rates of obesity and chronic diseases is a low-fat, high-carbohydrate diet full of nutrient-dense, fiber-rich foods like fruits, vegetables, beans, and whole grains. Repeatedly, the experts discouraged the consumption of foods dense with calories from saturated fats, like meat and cheese — staples of the Atkins diet.

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Thus, these two new articles examining the Atkins diet do not provide solid scientific support for either the safety or long-term effectiveness of the Atkins-type diet for weight loss or preventing CVD deaths. The authors of both these studies say that themselves in the articles, as does the editor in his editorial in the NEJM. What these studies do prove is that in the beginning and for the first few months, people tended to lose more weight on the low-carbohydrate, Atkins-type diet than they do on a conventional higher-carbohydrate, “moderate fat,” AHA-style diet. But, they did not lose more weight than they would lose on a healthy lower-fat, higher-carbohydrate diet. During the initial period of weight loss, some of their CVD risk factors appeared to have gotten a little better although we have no idea whether or not their arteries improved. By the end of one year, the Foster study found little difference in CVD risk factors between the ineffective AHA-conventional diet and the Atkins diet. He also showed that by one year, most of the weight loss benefit was gone. However, in the Fleming study the Atkins diet did far worse than a lower-fat, high-carbohydrate diet for improving CVD risk factors. It even proved somewhat worse for weight loss than the lower-fat, high-carbohydrate diet.

The Ornish studies also compared a lower-fat, high-carbohydrate near-vegetarian diet to the AHA diet and showed that the lower-fat diet not only improved most CVD risk factors better than this conventional AHA diet but also reversed the growth of plaques that were clogging his subject’s arteries. By contrast, the arteries of subjects following the moderate AHA diet actually grew more clogged over time. The Fleming study compared this same lower-fat, higher-carbohydrate diet to both the AHA diet and an Atkins-type diet. He showed the lower-fat, high-carbohydrate diet was better for weight loss and far better for reducing risk factors for CVD than either the AHA-style diet or the Atkins-style diet.

What is the bottom line?

First, we have to realize that there are several different diets that are being compared here in these studies and not to confuse them as the media often does. First, there is the low-carbohydrate, high- protein diet that is advocated by the likes of Dr. Atkins and Dr. Eades. Second, there is the higher-carbohydrate, moderate-fat diet promoted by the American Heart Association (AHA) and the USDA. Third, there is the lower-fat, high-carbohydrate, near vegetarian diet being promoted by the likes of the Pritikin Longevity Center and Dean Ornish. Though there are some differences, it is this third diet, which is based on fresh fruits, fresh vegetables, whole grains, starchy vegetables, and legumes, that is the closest to the recommendations of the NHA and the healthiest of the three discussed here. The most confusion comes from the fact that the high-carbohydrate, moderate-fat AHA/USDA diets that have been shown to be ineffective and the higher-carbohydrate, lower-fat, Pritikin/Ornish diets, which have been proven to be very successful, are often all lumped together as “low-fat diets.”

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Second, the studies to date have shown that the Atkins diet appears somewhat better than the conventional USDA diet that is recommended by the AHA and other health organizations for weight loss, but only because this conventional diet is almost completely useless for promoting weight loss. However, the Atkins diet is certainly no better and appears somewhat worse than the AHA diet for reducing overall CVD risk factors even when it produces more weight loss. Ornish proved a lower-fat, high-carbohydrate diet not only promotes weight loss and improves CVD risk factors, but that it actually unclogs arteries. By contrast, there is no proof an Atkins-style diet reverses blocked arteries and, in the long-term, compliance with this diet often leads to the worsening of most CVD risk factors as shown by Fleming. Finally, in the only head-to-head clinical trial, a lower-fat, higher-carbohydrate diet proved more effective for promoting weight loss than the Atkins diet and is far more effective at improving all CVD risk factors.

So, be careful, you may be losing more than just weight on an Atkins-type diet.

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