

# Are Low-Carbohydrate Diets Good for What Ails You?

By ACSH Staff — October 1, 1996

Although most nutrition authorities recommend diets high in carbohydrates, some recent, bestselling books push diets very low in carbohydrate and high in protein and/or fat. In *Protein Power* Drs. Mary and Michael Eades advance a high-protein, very-low-carbohydrate diet. Another author, Dr. Robert Atkins, has developed a new version of his own very-low-carbohydrate diet. Atkins claims that a metabolic state called ketosis an abnormal condition characterized by an excess of metabolic intermediates (by-products) called "ketone bodies" is the key to losing weight. When blood glucose is in short supply, ketone bodies replace it as the main fuel for the brain and certain other tissues.

However, diets that dispose people to ketosis tend to include excessive amounts of foods high in saturated fat and/or cholesterol; they thus can increase serum cholesterol levels in some people. It is well known that high cholesterol levels increase risk of heart disease. Ketogenic diets so low in carbohydrate that they induce ketosis also cause increases in uric acid levels that lead, in susceptible individuals, to gout and/or the formation of kidney stones.

Ketogenic diets often decrease appetite and increase fluid losses. Moreover, they are considerably less variable than unrestricted diets. Most people on ketogenic diets do lose weight, especially within the first seven to fourteen days; but their weight reduction during the first week is mostly due to losses of fluid, not fat. Most responsible health professionals do not advocate ketogenic diets for the public, because these diets are nutritionally imbalanced and, in the long run, are likely to increase the risk of heart disease.

## Twilight Zone?

Compared to Atkins and the Eades, Dr. Barry Sears, author of *The Zone*, is permissive concerning carbohydrate consumption. His "Zone-favorable diet" is unlikely to cause ketosis and is therefore less likely to lower appetite or increase fluid losses. Sears claims that the key to entering "the Zone" which he describes as a mysterious state of acuity, near euphoria, peak physical performance, and optimum health is a diet in which every meal has a carbohydrate-to-protein (C/P) ratio of 4/3. For overweight persons he recommends a caloric ratio of 40 percent carbohydrate, 30 percent protein, and 30 percent fat. (Because of the low caloric level, this level of protein is high but not inordinate.)

Although Sears's book does not make clear the rationale for this recommendation, the apparent thrust of the "Zone diet" is to maintain a specific (but unspecified) ratio of insulin and glucagon, important regulators of carbohydrate metabolism. In Searsian "Zonethink," maintaining the right ratio of these hormones contributes to the balancing of eicosanoids hormonelike substances

derived from polyunsaturated fatty acids. Eicosanoids are involved (for example) in immunity and blood clotting. According to Sears, maintaining one's eicosanoid balance is one's best bet to enter "the Zone."

Diet does somewhat affect eicosanoid levels, but that effect depends primarily on which types of fatty acids one consumes, not on the C/P ratio. In any case, no one has ever determined eicosanoid levels in Zone dieters. Furthermore, the role of eicosanoids in athletic performance is unknown. Finally, the fuzziness of the concept of "the Zone" virtually precludes analyzing Sears's claims for the diet.

### **But Wait; There's More . . .**

Why Sears claims, without substantiation, that a 40/30/30 caloric ratio is optimal is debatable. The ratio is, however, that of the macronutrients in the "EicoZone Meal Replacement Bar," marketed by Eicotech Foods and Nutrition Products. Eicotech's address matches that listed in *The Zone* for Surfactant Technologies a firm of which Sears was an owner. By dialing the toll-free number in the book, one can hear a prerecorded message from Sears praising the EicoZone Bar. In a leaflet mailed to inquirers, Eicotech touts the product as "the easiest, most convenient and delicious way to enter the Zone."

Sears claims or suggests that the Zone diet can help prevent, or even help reverse, heart disease; that it prevents cancer; that it has a "positive impact" on numerous other diseases; that it helps one to live a longer, more satisfying life; that it keeps one performing at one's "absolute best"; and that it can help one lose weight permanently. The dust cover of *The Zone* suggests that one can use the diet to reset one's genetic code and fight cancer, depression, diabetes, PMS, and symptoms of HIV infection and multiple sclerosis. The Zone diet would represent a major medical breakthrough if it could do just 10 percent of what Sears says it can. However, no one has reported any credible research into whether any of Sears's claims and hints deserve even a whit of confidence.

### **Lose Weight Now. Ask Me How.**

Typically, "anticarbohydrate" authors suggest that high-carbohydrate diets cause an overproduction of insulin and that this overproduction causes overeating and obesity and leads to insulin resistance and diabetes. The facts suggest otherwise.

Pima Indians in Arizona, for example, weigh, on average, 65 pounds more than Pima Indians in Mexico. The Arizonan Pimas have one of the highest rates of non- $\hat{\text{A}}\hat{\text{A}}\phi$ insulin-dependent diabetes mellitus (NIDDM) in the world. Their diet is high in fat and includes much more meat than the diet of the Mexican Pimas, which is rich in complex carbohydrates from grains and beans.

Studies of human populations have linked the development of obesity, hyperinsulinemia (an excess of insulin in the blood), and/or NIDDM with diets high in fat and low in fiber and starches. Moreover, several studies have shown that increasing dietary fat leads to increases in both caloric intake and weight.

On the other hand, in general, when obese people accustomed to a high-fat diet adopt a high-carbohydrate, very-low-fat diet, their caloric intake decreases and they lose weight.

Many Zone dieters undoubtedly will lose weight in the short run, if only because the diet restricts calories to about 1,000 to 1,400 daily for most overweight people. Sears correctly observes (a) that "It's hard to lose weight by simply restricting calories" (p. 20), and (b) that "Diets based on choice restriction and calorie limits usually fail" (p. 20). Notwithstanding these caveats, he advocates a calorie-restricted diet that severely limits consumption of complex-carbohydrate foods.

### **The Bottom Line**

In the last 10 years the proportion of Americans who are overweight has increased from about one quarter to one third. Diet gurus are having a field day undermining endeavors by responsible health professionals to convince Americans to limit their fat intake and eat plenty of fruits, vegetables, and whole grains. Some of the gurus claim, without scientific support, that low-carbohydrate diets will benefit people with heart disease, cancer, and many other health problems. However, abandoning balanced and/or rationally prescribed diets to adopt these faddish, low-carbohydrate diets is far more likely to endanger one than to improve one's health.

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