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## EDITORIAL

## What Diet Should We Recommend to Patients?

One of the questions most commonly asked of primary care physicians is, "What is the best diet?" A revised form is frequently posed by house officers and students: "What diet should we recommend for patients with atherosclerosis?" I often field similar questions in social settings. The subject is of consummate interest to Americans, though a general devotion to foods loaded with fat and calories suggests otherwise.

Clearly, we are what we eat. For more than 50 years, population studies and experimental protocols in animals have supported the idea that the Western diet, rich in saturated fat and cholesterol, was a major component of the pathophysiology of atherosclerosis. The risk of elevated blood lipids and atherosclerotic vascular disease climbs with greater amounts of dietary saturated fat and cholesterol and with higher degrees of obesity. When this relationship was first postulated and popularized, cardiologists, primary care internists, family physicians, and dietitians recommended that all Americans, particularly those with elevated blood lipid values or a family history of premature coronary heart disease, follow a diet reduced in saturated fat and cholesterol. But how much of a reduction is enough? Debate continues as to how severely saturated fat should be restricted in the diet with recommendations ranging from moderate (20-30% of total calories) to marked (5-10% of total calories) limits on fat intake.

The development of highly effective antihyperlipidemics—the statins, fibrates, ezetimibe, and high-dose niacin—have convinced most physicians that altering blood lipids with drug therapy is an effective strategy for patients with atherosclerosis. Many carefully designed and executed randomized, double-blind, controlled trials plainly documented that pharmacological lowering of low-density lipoprotein cholesterol and/or elevation of high-density lipoprotein cholesterol were associated with marked clinical benefit, specifically, significant reductions in mortality and morbidity.

With one notable exception, the Lyon Diet Heart Study, the same cannot be said of dietary investigations. It has proven difficult to demonstrate definitively that ingesting less saturated fat alters clinical outcome in patients with atherosclerotic vascular disease. Still, recommendations from the American Heart Association and the federal government continue to stress that pharmacological therapy for dyslipidemia should be combined with nutritional strate-

gies. Yet with minimal evidence of altered clinical endpoints in most dietary studies, the vigor with which practitioners advise dietary fat restrictions in conjunction with medication is quite variable.

Two lines of observation further confuse the issue. The aforementioned Lyon Diet Heart Study, one of the most quoted investigations, highlighted what is now known as the French paradox: citizens living near the Mediterranean Ocean in southern France appeared to have significantly lower mortality from coronary heart disease than those living in northern France.<sup>1,2</sup> Two groups of matched patients with coronary heart disease were compared. One consumed a standard northern-French diet rich in saturated animal fat, while the second ate a Mediterranean diet plentiful in fruits, vegetables, seafood, and olive oil. Both groups drank alcoholic beverages; however, the consumption of wine was higher in the Mediterranean group. Patients following the Mediterranean diet had markedly fewer coronary events during the relatively short follow-up period.

The second dietary intervention that has captured the attention of Americans is the so-called Atkins weight-reducing diet, named for the physician who popularized this low-carbohydrate, high-fat, high-protein diet. Scientific studies have repeatedly documented that ingesting simple carbohydrates, such as white flour, white rice, sugar, pasta and potatoes, leads to a rapid rise in blood glucose with a vigorous pancreatic insulin response. Appetite is stimulated, and individuals eat more.<sup>3</sup>

Clinical studies performed over the last 30 years have demonstrated that a diet low in carbohydrates and high in fat and protein produces a ketotic state that suppresses appetite in individuals who follow this dietary regime. For some people, this low-carbohydrate diet leads to impressive weight loss. Early studies suggested that the high fat content of the Atkins diet might lead to increased blood lipid levels, thereby exacerbating dyslipidemia. However, subsequent studies have shown that when individuals lose weight on the Atkins diet, blood lipid levels decline.<sup>4</sup> Not surprisingly, many obese Americans have tried to utilize the Atkins diet with varying degrees of long-term success and variable effects on blood lipids.

Sadly, the level of obesity in the United States has reached staggering proportions, particularly in areas where inexpensive, high-fat "fast" foods have become a major

component of the diet. Physicians, public health authorities, and the media have focused a great deal of attention on this epidemic.

When I advise patients with clinical atherosclerosis—or friends and colleagues who seek dietary counsel—I first recount the experience of the Lyon Diet Heart Study and then offer a short discourse on the ability of a low-carbohydrate diet to suppress appetite. Whether the goal is to control blood lipids or lose weight, I suggest an amalgamation that I call “the American Heart Association version of the Atkins diet” or “the Mediterranean Atkins diet”. The major precepts are as follows:

1. Markedly decrease intake of simple carbohydrates. If weight reduction is not required, modest intake is allowed but an effort should always be made to substitute complex carbohydrates, such as beans, whole-grain foods, and nuts. Because complex carbohydrates raise blood glucose more slowly than simple carbohydrates, pancreatic insulin secretion is moderated.
2. Decrease or eliminate ingestion of animal fats. Emphasize lean cuts if you must eat red meat. Prepare by broiling or baking—never by frying. Remember that some special cuts of pork can be quite lean.
3. Use liberal quantities of olive oil or peanut oil. These monounsaturated fats seem to have a beneficial effect on blood lipid levels. Polyunsaturated oils, such as canola oil, are second-best. Strenuously avoid hydrogenated or partially hydrogenated vegetable oils, also known as trans fats. Often labeled as partially hydrogenated vegetable oils although solid at room temperature, trans fatty acids are commonly found in commercially available baked goods and margarines.
4. Eat lots of fruits, vegetables, and nuts (especially almonds, walnuts, and hazelnuts). Most nutritional experts recommend six to nine servings of fruits and/or vegetables daily. Other diseases are also beneficially affected by a diet high in fruits and vegetables.<sup>5,6</sup>
5. Use seafood as the main source of dietary protein, particularly oily fish from northern oceans. These include salmon, mackerel, tuna, sardines, anchovies, and Alaskan halibut. Other seafood is also preferred over red and white meat. White meat from chicken and turkey is favored over red meat (beef, lamb, and pork) and the dark meat of chicken and turkey.

6. Bean curd—or tofu—products are highly-recommended sources of protein and complex carbohydrate.
7. Ingest only modest quantities of foods containing sugar or corn syrup. These spur rapid rises in blood sugar and subsequently, a strong pancreatic insulin response.
8. Exercise for 40 or more minutes per day. Aerobic exercises, such as walking, jogging, swimming, or rowing, are ideal. Some weight-training is also helpful and can be performed 2 to 3 times per week for approximately 30 minutes. If you do not already exercise habitually, consult a physician and a trainer before starting an exercise program.

In my opinion, these simple tenets reflect sound practical advice based on currently available knowledge. I am sure that thoughts on this subject will evolve as new studies produce additional hard end-points. I welcome your responses to my views. You can contact me via email at [jalpert@u.arizona.edu](mailto:jalpert@u.arizona.edu).

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