

# Diet dilemma: Are cardiologists going loco for low-carb?



Seven years ago, when his triglycerides hit 500 mg/dL, cardiologist **Dr Ted Feldman** decided the time had come to give up on the diets being pedaled by reputable US health associations to help lower his soaring lipid levels. Triple drug therapy helped slash his triglycerides to 150 mg/dL, but it was only after starting on a low-carbohydrate diet that Feldman was able to get his triglycerides down to 51 mg/dL, his LDL down from 200 to 53 mg/dL, and his HDL from 27 to 59 mg/dL.

Feldman, medical director of wellness and prevention at the Miami Cardiac and Vascular Institute, says that "low-carb" not only has become his own lifestyle choice but is also the strategy he advocates for his patients who, like him, have tried low-fat diets and failed to see their cardiovascular risk factors budge.

"I have found personally and professionally that the effect of low-carb diets on patients who have atherogenic dyslipidemia is extremely beneficial. The best example is myself," Feldman says.

# In the absence of evidence



Dr Arthur Agatston

For a group of specialists known to be sticklers for evidence-based medicine, cardiologists, by all accounts, seem to be embracing higher-protein, low-carbohydrate diets despite a dearth of long-term studies supporting their benefits. Feldman can reel off a list of fellow cardiologists who, like him, are on the diet

and/or recommending it to their patients; other cardiologists have related their personal experiences to **heart** *wire*, particularly on the South Beach diet designed by cardiologist **Dr Arthur Agatston**. There are other options aplenty, including the Atkins, Zone, Power Protein, Low GI, and Montignac diets, some of which have been around for years and are only now enjoying a true renaissance of popularity. What's more, after decades of only anecdotal support, there are finally some small, relatively short-duration studies to support them. But does the limited evidence to date support the high level of enthusiasm?



Dr Gary Foster

**Dr Gary Foster** led one of two studies that appeared in the *New England Journal of Medicine* last year showing what he admits were surprisingly positive findings. Three other studies have also produced similar results. In Foster's study, people randomized to an Atkins-style diet lost weight, as predicted. What was unexpected were the positive changes in lipid profiles. Indeed, triglycerides were consistently reduced across the five studies to date, while HDL levels increased in two of the five studies and LDL levels went down in one study but remained the same in the others.

# Weight loss and lipid changes in published low-carb studies

First author	Lipid findings
Sondike <u>1</u>	39 obese patients randomized to LF* or LC* diet for 12 weeks. LC patients lost more weight and had significantly lower LDL levels, marginally significant triglyceride reductions, but similar changes in total cholesterol and HDL
Brehm <u>2</u>	53 obese women randomized to LF or LC for six months. More weight loss and triglyceride reductions in LF group, but no significantly different changes in HDL, LDL, total cholesterol, glucose, insulin, or leptin
Samaha <u>3</u>	132 obese patients randomized to LC or LF/low-calorie diet for six months. Greater weight loss and triglyceride reduction in LC group; diabetic patients in the LC group had better improvements in serum glucose
Foster <u>4</u>	63 obese patients over 12 months. More weight loss at six months but not at one year in LC group vs LF. Improvements in HDL, cholesterol, and triglycerides in LC vs LF, but no differences in glucose or insulin measurements
Westman <u>5</u>	(nonrandomized) 51 obese/overweight patients on LC diet lost weight, increased HDL, and reduced LDL and triglycerides.

<sup>\*</sup>LC=low-carbohydrate; LF=low-fat

"I went into this very pessimistically, thinking that we would prove that this diet wasn't good for you and I wound up rethinking the conventional wisdom," Foster told **heart** wire. "What was especially surprising for me was that HDL went up and triglycerides went down significantly, and from a cardiovascular disease risk-factor point of view, this was unexpected and impressive."



Dr Eric Westman (Source: Duke University Medical Center)

Likewise, **Dr Eric Westman** (Duke Diet and Fitness Center, Durham, NC) and colleagues created quite a stir at the 2002 **American Heart Association** meeting when they showed that an Atkins-style diet produced better weight loss and more favorable lipid-profile changes when compared with a low-fat diet in 63 obese, hyperlipidemic subjects. The study prompted the AHA to hurriedly release a statement to the public emphasizing that just because a positive study about the Atkins diet had been presented at the association's meeting did *not* mean that the AHA had changed its position on high-protein diets. Westman subsequently conducted a second study that reaffirmed the lipid findings that had shown up in his initial research.

"The unexpected findings were that cholesterol did not go up while these people were losing weight and that the triglycerides and HDL axis also had improvement. That was unpredicted," he told **heart** wire.

# Low-fat diets have fallen from fashion



Dr Dean Ornish (Source: Preventive Medicine Research Institute)

Not everyone, however, is impressed by the findings to date. **Dr Dean Ornish** gained recognition and respect for demonstrating, in his **Lifestyle Heart Trials** during the late 1980s and 1990s, that lifestyle changes, including eating a very low-fat vegetarian diet, could produce CAD regression. He points out that the reduction in triglycerides in the recent studies of Atkins-type diets should surprise no one, since they were compared with the AHA/NCEP diet, which permits a high proportion of simple carbohydrates and roughly 30% of calories from fat. By contrast, his low-fat "Reversal" and "Prevention" diets are vegetarian, composed primarily of fruits, vegetables, and complex carbohydrates, including whole grains and soy products, and permit only 10% of calories from fat. The high proportion of simple carbohydrates in the AHA/NCEP diet could easily increase triglycerides, Ornish says, making triglyceride levels in Atkins dieters appear that much lower.

Ornish's diets, along with the low-fat nonvegetarian diet devised by the late **Dr Nathan Pritikin**, are decidedly out of fashion among today's dieters, discarded during the mid-1990s. By contrast, Agatston's *South Beach Diet* is number one on the *New York Times* best-seller list for "Hardcover Advice," while *Dr Atkins' New Diet Revolution* and *The Atkins Essentials* are numbers one and two for "Paperback Advice."

#### From the mainstream media to medical practice?

Several of the cardiologists interviewed by **heart** wire acknowledged that the Gary Taubes article "What If It's All Been a Big Fat Lie?" that published July 7, 2002 in the *New York Times Magazine* marked the dawn of the modern-day low-carb love affair. In his article, Taubes argues that very little research was done examining low-fat diets specifically for weight loss and primary heart-disease prevention before the strategies were taken up by health-advocacy groups. (An earlier version of Taubes's article appeared as a two-part article on **www.theheart.org**.)

In an interview with **heart** *wire*, Taubes explained that he was familiar with the five low-carb studies, all of which had been presented but not published when he was writing the story. He also argues that studies predating the low-fat revolution are even more persuasive: restricting carbohydrates was an established form of weight control in decades long past and was even advocated by **Dr William Osler** in his classic 1892 text, *The Principles and Practice of Medicine*. "In fact," Taubes says, "it's low-fat diets that are a fad."



Dr David Katz (Source: Yale School of Public Health)

Taubes's article was met with a mix of praise and outrage in the medical community when it appeared, but few would disagree on the extent of its impact on physicians. **Dr David Katz**, professor of public health and medicine at Yale University, who had several colorful criticisms of Taubes's *NYT* article, nonetheless acknowledged, "It's amazing what an influence that article had. The *New York Times* had now weighed in, and doctors who read it thought, gosh, the *Times* is endorsing low-carb diets, there must be something to it! People would like to think that all doctors are meticulous scientists and pour over the scrolls of sacred knowledge by the light of a candle to reach the right conclusions, but I think a lot of them get their information from the *New York Times*."

-SW

Agatston freely admits that the South Beach diet grew out of an interest in tailoring a high-protein diet like Atkins to his heart patients. Most of Agatston's research has been in the area of arterial calcification and EBT scanning. "In the late 1980s and early 1990s when the statins came out, we thought all we needed were statins and you could have your cake and eat it too. But at the same time we were watching our patients, the country, and, frankly, myself getting fatter. We saw some people who did well on Atkins, but we didn't want to give saturated fats to heart patients or restrict antioxidants and nutrients in fruits and vegetables," he told heart wire.

When the statins came out, we thought all we needed were statins and you could have your cake and eat it too.



Because of its emphasis on whole foods and fewer saturated fats, the South Beach diet in particular has attracted a surprisingly sizable following among North American cardiologists. In Europe, and to a lesser extent Canada, the "healthier" low-carb corollary has been Michel Montignac's "Montignac Method," around since the late 1980s but gathering momentum a decade later, based, as it is, on eating low-glycemic-index (GI) foodsproteins, fats, and complex carbohydrates in combinations that do not raise blood-glucose levels.



Dr Barry Groves

Low-carb diets are also soaring in popularity in the UK. **Dr Barry Groves**, a nutritional scientist based in the Oxfordshire Cotswolds, UK, estimates that roughly 5% of the population of Britain is currently on some form of low-carb diet and that the Atkins diet is in the news on a daily basis. He has good reason to notice: Groves himself has been eating low-carb for 42 years.

# The "manly" man's diet?



Prof Anne De Looy

Prof Anne De Looy, who is heading up a new dietetics program at the University of Plymouth, UK was recently involved in a study comparing the Atkins diet with three other calorie-restricted diets (Weight Watchers, Rosemary Conley, and Slimfast). What was unusual about the study was that it was funded by the British Broadcasting Corporation (BBC), which turned the six-month study of 300 dieters into a serial reality-TV show called *Diet Trials*. According to De Looy, the Atkins group in this unconventional studyat least the ones who stuck to the diet did beautifully and saw their lipid levels go down, but overall, no one diet turned out better than the others.

One interesting observation from the study was that men appeared to do particularly well on the Atkins diet and seemed to find it easier to stick to. "I think that especially when they were going out for dinner in mixed groups, having meat on the plate and reducing the amount of fruit intake still seemed quite 'manly,' " De Looy told heartwire.

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Asked what he thinks of the current low-carb craze sweeping North America and Europe, **Dr Jean Dumesnil** (Laval University, Quebec, QC), who wrote the preface to two of Montignac's best-selling diet books, admits he's pleased. "I personally began my education in this seven years ago when I started on the Montignac diet and lost 45 pounds and was so pleased with the results, because the diet wasn't restrictive, and with the right choices, I could eat as much as I wanted. But until a year or two ago this was like preaching in the desert, because the current dietary recommendations were focused on limiting fat and calories, and carbohydrates were okay. In fact, the AHA guidelines said that carbohydrates should be 55% or more of your diet but didn't qualify which kinds of carbohydrates. This is a major step forward, because I think the greatest culprit for the obesity epidemic that we're currently living in is definitely the insulin-stimulation and the hyperinsulinism caused by high-carbohydrate eating," he said to heart wire.



Dr Jean Dumesnil

Dumesnil, an echocardiographer specializing in valvular diseases, admits he was no nutrition expert to begin with but became a major advocate for low glycemic-index-eating after his own success. He teamed up with obesity/lipid experts from his institution to study the effects of a low-glycemic-index diet on lipid parameters, calorie consumption, appetite, and insulin levels.8

Dumesnil, as well as Agatston, Westman, and Foster, all have separate studies under way attempting to flesh out the data on low-carb/low-glycemic-index diets over the long term. Of these, Foster's will no doubt carry the most clout: it is funded by the US **National Institutes of Health** and will randomize 360 people to either a low-fat or low-carbohydrate diet for at least two years and look at a range of end points, including hunger, convenience, endothelial function, exercise tolerance, bone mass, and kidney function.

## The proof is...er...in the pudding?

In the meantime, Agatston, for one, says he does not need to wait for scientific findings. He himself has first-hand experience with the diet, plus accolades from physicians all over the US, who, he claims, write to him or come up to him at meetings to praise his strategy and call it "the doctors' diet."

What's more, he points out, health-advocacy groups in the US have a long tradition of basing their nutrition recommendations on common sense, rather than long-term studies, since the diet studies are almost impossible to do scientifically over the long term.

"When the AHA first made its low-fat, high-carb recommendations, it made the decision not to do a large study because it's not like studying something like vitamin E where you can give a placebo," Agatston says. "No one is blinded to diet, and there are all kinds of confounding variables. People criticize the South Beach diet, saying, 'There are no long-term studies.' Well, there are no long-term studies of any diet that show that they work. In fact, all the studies of low-fat diets show that they don't work over the long term."

Groves points out that much of the research supporting low-carb diets comes not from clinical science but from epidemiology and anthropology. "There are epidemiological studies by people like **Vilhjalmur Stefansson** and **Dr Weston Price** in the earlier part of the 20th century, who looked across the world at people who ate essentially a low-carb, high-fat diet based on animal products and found that none of them had any diseases that we have. And that's not just heart disease, obesity, hypertension, and diabetes, but they didn't even get infectious diseases. And there's a lot of evidence in the medical press, but most of it dates back to before the low-fat diets came in, in 1982 in the US. I say look at the evidence supporting low-carb diets, and try it yourself before you knock it."



Never has there been a society that was consuming the number of processed carbohydrates that we have been in the US.

Agatston, for his part, argues that the most profound evidence supporting his diet has been inadvertent. "The one big unintended experiment was done in the US when we created all these processed carbohydrates in response to the low-fat recommendations. While there have been societies that have been high fat and societies that have been low fat and successful from the cardiovascular/cancer point of view, never has there been a society that was consuming the number of processed carbohydrates that we have been in the US."

Indeed, if there is one common theme between Ornish's and Pritikin's low-fat diets and Agatston's and Montignac's diets, it is the avoidance of simple carbohydrates and the emphasis on whole, nonprocessed foods.

## Katz makes the connection.



"People are blaming the USDA food pyramid, and they're blaming Dean Ornish for being fat. Everybody loves to beat up on Dean Ornish these days because 'he put us on these low-fat diets and they don't work,' " says Katz. "In fact, there was a time when going on a low-fat diet actually *did* work, but people corrupted the concept of low-fat eating by eating low-fat junk and sugar. Were Dean Ornish, Nathan Pritikin, or other advocates of low-fat eating saying, 'Build your diet on reduced-fat cheese noodles and Snackwell's® cookies? No! They never said any such stupid thing. They said eat a diet based on whole grains, fruits, vegetables, and lean protein, and you'll be healthier. And you know what? They were right."

Ornish himself is the first to admit that avoidance of processed carbohydrates is the area of common ground between his approach and that of the popular low-carb diets. "Where we differ is where we go from there," Ornish tells **heart** *wire*. "We agree on the diagnosis, but not the prescription. A lot of these diets seem to lump all carbs together and say that you should avoid all carbs and eat more sausage, bacon, pork rinds, Brie, and butter, which is ridiculous. These are not health foods even though I'd like to be able to say that they are. But telling people what they want to hear is always an easy sell and it preys on those who would like to believe that it's true, even though it isn't."

Were . . . advocates of low-fat eating saying, 'Build your diet on reduced-fat cheese noodles and Snackwell's cookies? No! They never said any such stupid thing.



Katz believes low-carb diets are a fad that will come and go for the same reasons that low-fat diets have become so unpopular. "Some good could come" of the current low-carb craze if consumers paid attention to the details, he acknowledges: "If people were to add up the lessons rather than substituting one for the other, that would be a good thing. If they were to say, 'Well, we learned before that too much fat can lead to weight gain, and now we're learning that too much sugar and refined starch can lead to weight gain, and ultimately it's really just too many calories, let's put that all togetherAh-ha!' But unfortunately that's not at all what's happening. People who five or 10 years ago thought that all they needed to do is cut fat and they could eat 12 pounds of low-fat cookies now have an equally silly notion that all they need to do is cut carbs and they can eat 12 pounds of pork rinds a day. And somehow their health and weight will come under control. Both notions are comparably silly."

Katz predicts that the proliferation of highly processed low-carb foods will have the same detrimental impact on low-carb diets that low-fat foods had on Ornish's diet and others. "We are now at the beginning of a mad proliferation of low-carb junk food. Low-carb bread, beer, pasta, cake, ice cream, doughnuts, muffins. And as soon as people can cut their carbs without cutting any food, they're going to be exactly where they were on their low-fat diets. They're going to be cutting no calories, eating more not less, and suddenly they're going to say, what happened?"

#### When the pen is mightier than the scalpel

Got a great idea for a new diet? Why keep it to yourself or put your patients on it, when you could write a best-selling book! Most of the experts interviewed for this **heart** wire feature are also making a name for themselves as authors. More than five million copies of the *South Beach Diet* have been sold since it first came on the shelves in April 2003,

while the Atkins foundation claims to have sold 15 million copies of *Dr Atkins' New Diet Revolution*, and Atkins Nutritionals posted US \$100 million in revenues in 2002. Ornish has written and published five books in the past 25 years, most of which have also enjoyed time on the best-selling books lists.

Katz's *The Way to Eat* has been featured on *Oprah*, while Dusmesnil not only wrote the preface for Michel Montignac's popular diet books, he also has his own diet guides: *Bon poids, bon coeur avec la méthode Montignac* and *Bon poids, bon coeur au quotidien*, both of which are currently being translated into English. Barry Groves has several books under his belt, the most recent being *Eat Fat, Get Thin!* 

Even Gary Taubes, who claims he's been engrossed in the low-carb diet controversy since his *New York Times Magazine* story was first published, has been slogging away at a book of his own.

Dusmesnil, for one, is not about to give up his day job. "It's more worthwhile, at least in Quebec, to do cardiology than to write diet books that sell only six thousand copies," he told **heart** wire.

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# The dawn of low-carb junk food?

According to Agatston, he and his South Beach team have been trying their hardest to keep up with the low-carb products coming on the market. "We're buying things like crazy and trying to get a handle on the different brands and it's not easy. But the ones that are truly low-carb and slowly digested certainly have the advantage of not making you hungrier. I would down boxes of low-fat cookies and assume that anything that was low fat I could eat with impunity, and the thing is, when you're munching on that, you can eat boxes at a time. You can't do that with more slowly digested low-carb foods, so it has that advantage."



There is no evidence this is lasting, and patients may ultimately experience undesirable effects long term, such as bone disease, kidney dysfunction, more heart disease, etc.

The major disadvantage with any processed foods, low-carb, low-fat, or otherwise, Agatston says, is that they aren't whole foods. "And if you build your whole diet around bars and processed snacks, then you're missing the natural nutrients that you get from the veggies, whole grains, and whole fruits."

He believes the AHA is starting to come around to the notion that processed carbohydrates may be more a part of the problem than the solution. "The latest recommendations from the AHA basically do away with the severe low-fat diets and instead talk about the metabolic syndrome, and whole grains, and Mediterranean oils. So they are very much going in the direction that we approve of. We started what we were doing in about 1996 when it was a bit controversial, but I expect the AHA doesn't think we're all that controversial anymore."



Dr Robert Eckel

Contacted by heartwire, Dr Robert Eckel (University of Colorado, Boulder), chair of the American Heart Association's Council on Nutrition, Physical Activity, and Metabolism, says that while the South Beach diet is "certainly preferable" in terms of the types of foods it permits, low-carbohydrate diets in general are "not consistent with the nutritional guidelines established by many professional organizations and governments around the world, including the US Department of Agriculture, the World Health Organization, the AHA, American Dietetics Association, and the American Diabetes Association."

Even if more weight loss occurs within the first three to six months on low-carbohydrate diets, "there is no

evidence this is lasting, and patients may ultimately experience undesirable effects long term, such as bone disease, kidney dysfunction, more heart disease, etc," Eckel says.

#### Risk is relative

Westman acknowledges that there are large questions remaining about the health risks of low-carb eating, but that he, for one, is willing to accept some degree of risk in his patients, at the same time that he keeps a very close eye on possible emerging side effects. In fact, the Duke Diet and Fitness Center (DFC), where Westman is a staff physician and researcher, has been offering a low-carb diet as an option for patients who have tried other diets and failed.

Westman points out that compared with the side effects of drugs, of which weight-loss drugs are a prime example, a low-carb diet seems low risk.

"We have people come in to the DFC who have failed the traditional diet program and want to have surgery for their weight loss, and a low-carb diet is not anywhere near as risky as weight-loss surgery. . . . I hope that what we can do is stimulate the same kind of rigor into diet studies as there are into drug studies. We don't want to hang our hats on intermediate outcomes, and we really do need hard outcomes of life and death, quality of life, recurrent events, or prevention of first events with low-carb diets, but we're a long way from that."

This certainly suggests to us on an epidemiological basis that our present American Heart Association diet is not working.



Feldman, too, would be happy to see more comprehensive data on low-carb diets, but he's not holding his breath. Such studies, he says, would have to be large, long-term, and funded by government to carry any clout, something he believes will never happen. "Unfortunately the definitive study, which would be a five- to 10-year outcome study comparing modified low carb with modified low fat, would take several hundred million dollars of government money. And the federal government is loathe to spend money that would potentially alienate large political groups, including dairy farmers, beef farmers, hog farmers, or the megagiants of the processed-food industry, to suggest that in fact one diet is better."

For the time being, Feldman is content to base his judgment on the small positive studies emerging in the low-carb field and, on the flip side, the failure of the apparent alternatives. "I agree that we're embracing low-carb diets in the absence of long-term data, but there is an emerging body of evidence that at least suggests that our emphasis on low fat, which has translated into high carbs, has made us the fattest society of all time, with epidemic diabetes, metabolic syndrome, etc. This certainly suggests to us on an epidemiological basis that our present American Heart Association diet is not working."

# Tossing the baby out with the bath water?

The longer we fiddle while Rome burns, the more Rome will have burned before we come to our senses.

It's a position that alarms Katz, who thinks it is "a shame" that cardiologists are now advocating diets like Atkins or South Beach. "They've just been swept along in the popular phenomenon, and most doctors are woefully undereducated about nutrition," he laments. "I think we're tossing out the baby with the bathwater, we're not distinguishing between the types of carbohydrates that people should be eating more of, we're truly ignoring the best nutrition data we have, and we are ignoring it at our peril. Low-carb diets are a dangerous diversion. The longer we fiddle while Rome burns, the more Rome will have burned before we come to our senses."



Where most experts agree is that diets, per se, don't last. What is needed, instead, are lifestyle changes that people can adhere to in the long term. "Counting calories is doomed to failure," Dumesnil insists. "It's never worked, and it never will work, because you can't restrict yourself for a lifetime and that's the story of most diets. It has to be a permanent change in behavior, and to be a permanent change, it needs to be a palatable change and something that you can live with for the rest of your life."

Indeed, "palatable change" is the ad hoc theme song of the South Beach and Montignac diets and is what advocates of these strategies use to differentiate them from the Atkins no-carb diet at one end of the spectrum and the low-fat Ornish diet at the other. They are palatable, so people can stick with them. In his defense, Ornish points out that the day-to-day eating habits he recommends to people who do not have cardiovascular risk factors or established heart disease is *not* ultralow fat and is fully sustainable in the long term. "What I propose is a way of eating, it's not a diet. You want to indulge yourself sometimes? Have fun! But don't eat that way all the time. Try to move your diet toward this end of the spectrum [low-fat/complex carbohydrates] and you're going to be healthier."

People who really just want to lose weight, and consequences be damned, should feel free to use cocaine several times a day.



Weight loss at any price, Katz warns, has never been socially acceptable, and he questions why people are lapping up low-carb diets, given their unknown physiological price. "People who really just want to lose weight, and consequences be damned, should feel free to use cocaine several times a day," he quips. "They'll feel great, they'll be very energetic, they won't need much sleep, and they'll lose weight. Why not do that? Because it's bad for you! Well the same is true for many of these diets. I think we should think health first, then weight control within the context of that."

#### Who recommends what?

Asked whether, in light of his research, he recommends low-carb diets to his patients, Foster insists he does not. Low-calorie, low-fat diets should be the recommendations until proven otherwise, he says.

"I think that probably the most prudent recommendation for obese patients with or without CVDand this is going to sound sarcastic, and it's notis to consume few calories. What you need to realize is that as clinicians this is not as easy as we make it sound. Especially in this kind of environment that prompts us to eat more and move less."

Eckel agrees. "Until proven more successful long term, I would not recommend this approach. It's modest caloric restriction plus more activity that will ultimately work. If weight loss just can't be achieved, then more physical activity plus an aggressive approach to cardiovascular disease risk factors, ie, blood pressure, lipids, blood sugar, etc, should be stressed."



People are hungry for alternative approaches because low-fat, low-calorie diets are notorious for their inability to control weight over the long run.

Foster, however, admits his work has made him "more open to alternatives that aren't necessarily conventional wisdom in which patients may experience greater adherence."

"Having said that," he continues, "I think we have to be very careful about making public-health recommendations or even one-on-one clinical recommendations when we have very limited data on the

low-carbohydrate approach. The popular enthusiasm for this far outdistances the scientific data, and that doesn't mean that it's wrong, it just means that it's premature. What it tells youpardon the punis that people are hungry for alternative approaches because low-fat, low-calorie diets are notorious for their inability to control weight over the long run. What these diets have done is put the finger on the pulse of millions of dieters who say, I know what to do, but it's difficult as all get-out to do it."



In the UK, Groves advises people to eat what he calls "real foods." In other words, people should avoid processed foods or supplements. "A lot of the low-carb foods are based on meal replacements, and of course a lot of people eat prepackaged foods these days. I would suggest that they eat real food in its natural form: meat, fish, cheese, eggs, dairy products generally, fresh fruit and vegetables, as they come, rather than in packaged form, because the manufacturers, although they are governed by what people want, will make foods out of the cheapest ingredients they can get."

At Duke, Westman insists that he and his colleagues advocate *researching* low-carb diets. "We're not advocating the diet yet, but that distinction is sometimes lost." He acknowledges, however, that low-carb diets may be here to stay.

"My gut feeling or hunch is that this diet will play a role, because the healthiest diet is probably based on the individual and some people may have difficulty with carbs, just as some people have difficulty with fats. The political compromise here is that both are right and that some people should eat some way and others another."

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- Polar bears in the desert: North American childhood obesity linked to toxic nutritional environment [HeartWire > News; Oct 28, 2003]
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- AHA says popular high-protein diets are ineffective and can cause potential health problems [HeartWire > News; Oct 09, 2001]
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