

Low-Carb Better Than Low-Fat Diet for Lipids

BY SHERRY BOSCHERT
San Francisco Bureau

SAN DIEGO — People on very-low-carbohydrate diets who consumed three times as much daily saturated fat as people on high-carbohydrate, low-fat diets, lost more weight and had twice the reduction in saturated fat levels compared with the latter, according to a report on a small study at a symposium on obesity sponsored by the American Society of Bariatric Physicians.

"If you still believe that you are what you eat, [you are] wrong. You are what you save when you eat," because the level of carbohydrate intake dictates how the body makes use of dietary fatty acids, Dr. Stephen D. Phinney said.

Total circulating saturated fats decreased by 57% over the 12-week study on the low-carbohydrate diet and by 24% on the low-fat diet, he reported.

The unpublished data came from a recent randomized study of 40 patients that was led by Jeff S. Volek, Ph.D., of the University of Connecticut, Storrs, with Dr. Phinney and associates. Two groups of 20 patients (10 men and 10 women in each) with triglyceride levels above 150 mg/dL and low HDL cholesterol levels (less than 40 mg/dL in men or less than 50 mg/dL in women) were put on either a low-carbohydrate, ketogenic diet or on a low-fat, high-carbohydrate diet.

All of the patients consumed about 1,500 calories per day. The low-carbohydrate diet contained more protein than the low-fat diet (28% of calories vs. 20%, respectively), more total fat (59% vs. 24%), and more saturated fat (37 g/day vs. 12 g/day).

Although people tend to assume that the low-carbohydrate diet "would be dangerous with all that fat," said Dr. Phinney of Elk Grove, Calif., and a professor

of medicine, emeritus, University of California, Davis, patients in the low-carbohydrate group lost more weight than did those on the low-fat diet (10 kg vs. 5 kg) and more fat (6 kg vs. 4 kg).

In addition, those on the low-carbohydrate diet also lost more

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abdominal fat (828 g), compared with those in the low-fat diet group (526 g). Besides fat loss, water loss accounted for most of the weight loss, he said.

The study results suggested benefits in lipid levels, Dr. Phinney reported. Triglyceride levels decreased by 51% on the low-

carbohydrate diet and by 19% on the low-fat diet. HDL-cholesterol levels increased by 13% on the low-carbohydrate diet and remained essentially unchanged on the low-fat diet.

There were no significant differences between groups in LDL cholesterol levels. LDL cholesterol particle size increased by 3% in the low-carbohydrate group and did not change in the low-fat group; this may be significant because smaller, denser LDL particles increase cardiovascular risk, he said.

Saturated fats as a percentage of triglycerides decreased by 12% in the low-carbohydrate group and by 5% in the low-fat group. Fatty acids esterified to cholesterol ester decreased by 10% in the low-carbohydrate group and by 5% in the low-fat group. "So it's a uniform decrease in both compartments of circulating lipids," he said.

Dietary saturated fatty acids seem to be of much less concern

when consumed during a carbohydrate-restricted diet, Dr. Phinney explained. "The human machinery [seems to be] well equipped to handle this kind of diet."

He also reviewed separate data showing that serum cholesterol levels tend to decrease during weight loss of up to 10% of body weight in people on low-carbohydrate diets. Total cholesterol and LDL cholesterol levels then rise transiently as weight loss approaches 20% of baseline body weight, but lipid levels stabilize (with decreases in LDL cholesterol and increases in HDL) when the patient switches to a maintenance diet.

"If you look at cholesterol during weight loss, this can be alarming, but it's pre-owned" cholesterol that was stored in fat cells and is secreted into plasma during weight loss on low-carbohydrate diets, he explained. Return to a maintenance diet should stabilize lipid levels, he noted. ■

Lifestyle Changes in Middle Age Help Stave Off Disease

BY PATRICE WENDLING
Chicago Bureau

TUCSON, ARIZ. — The benefits of adopting healthy lifestyle habits later in life are significant, Dr. Dana King and colleagues reported at the annual meeting of the North American Primary Care Research Group.

He presented a secondary analysis of the Atherosclerosis Risk in Communities (ARIC) cohort study of 15,792 adults who were aged 45-64 years at the outset. Participants were reexamined every 3 years, with the first baseline screening occurring in 1987-1989, and the fourth and final screening in 1996-1998. Telephone visits were conducted annually.

At baseline, only 1,344 (8.5%) had all of the following four healthy lifestyle habits: They ate at least five fruits and vegetables a day, walked 150 minutes a week or more, were not obese, and did not smoke, "That [low rate was] tremendously disappointing," said Dr. King, of the department of family medicine at the Medical University of South Carolina, Charleston.

Those less likely to have all four healthy habits tended to be male, black, and aged 45-54 years, and to have hypertension or diabetes mellitus, less than a college education, and an annual family income of less than \$35,000.

After 6 years, an additional 970 participants switched to a healthier lifestyle. Women were more likely to switch than men (9.1% vs. 7.4%), he said. The most common changes were

improved diet, increased exercise, and smoking cessation. Almost no one changed his or her body mass index category significantly, he said.

For those who adopted all four habits, the benefits were substantial. With an adjusted logistic regression analysis, the relative risk of cardiovascular disease was reduced by 35% and all-cause mortality by 40% in only 4 years, he said. Adopting only three habits was not as beneficial, resulting in a 25% reduction in all-cause mortality and a nonsignificant reduction in cardiovascular disease compared with those who have fewer healthy habits.

Dr. King called the results surprising and powerful because of the substantial benefit in cardiovascular disease and mortality seen after a relatively short period of 4 years. Other studies, such as the Women's Health Study and the Health Professionals Follow-up Study, have shown similar results. But these studies investigated individual habits and didn't focus on people who adopted new, healthy lifestyles in middle age, he said.

"The present study adds new information that adopting a healthy lifestyle later in life is not futile," Dr. King said. "Doing all the habits is the way to go."

Dr. King acknowledged that the study was limited by self-report data for diet and exercise; a short mortality and cardiovascular follow-up period; lack of data on the exact timing and consistency of the participants' health habits; and data from only four communities rather than from a nationwide database. ■

Chest Pain Trumps Other Risk Factors if Calcium Score Is Low

BY PATRICE WENDLING
Chicago Bureau

MONTREAL — Chest pain in patients with low coronary calcium scores may serve as a red flag for the presence of obstructive soft or uncalcified coronary atherosclerosis, Dr. John S. Ho said during a poster presentation at the annual meeting of the American Society of Nuclear Cardiology.

Dr. Ho based this conclusion on an analysis of 353 patients who underwent myocardial perfusion imaging (MPI) between 1998 and 2005, and whose calcium score was quantified with electron beam CT as 0-10 Agatston units.

Only 7 (2%) of 353 of patients had an abnormal scan. Despite these small numbers, the investigators were able to show a highly significant association between a history of chest pain and an increased frequency of an ischemic MPI study. Among symptomatic patients, 4% had an abnormal perfusion study, which is more than 10 times the frequency of an abnormal scan in those without chest pain.

Contrary to conventional thinking, the presence of traditional coronary risk factors—such as age, gender, family history of premature coronary heart disease, hyperlipidemia, and diabetes—was not predictive of an abnormal study, said Dr. Ho, a cardiologist with the Cooper Clinic in Dallas.

The absence of significant coronary

artery calcification is associated with a low risk of subsequent adverse cardiovascular events, but rare cases of clinically significant ischemic heart disease do occur in individuals with a very low calcium score. Such cases are thought to be the result of a significant burden of soft or uncalcified plaque, predominantly in younger, female individuals, he said.

Overall, 50% of patients in the study had hyperlipidemia, 4.5% had diabetes mellitus, 34% had hypertension, 13% were current smokers, and 67% were overweight. Furthermore, 38% had a family history of heart disease, 30% had an abnormal ECG, and 30% had chest pain. Their mean age was 55 years, and 58% were male.

Some physicians believe that Framingham risk factors explain 90% of atherosclerosis, but Dr. Ho said that clinically, some patients have no risk factors or well-controlled risk factors and still have extensive disease. "Using coronary calcium is a measure of atherosclerosis, and a more direct means with which we can assess risk," he said.

The protocol at the Cooper Clinic is to utilize calcium scoring for both asymptomatic and symptomatic at-risk patients. In patients with chest pain, the decision to perform nuclear stress testing is based on clinical judgment, Framingham risk scores, and Forester evaluation of chest pain, Dr. Ho said. ■



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DR. HO