

## Is Family History More Accurate Than Risk Score?

BY MITCHEL L. ZOLER  
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NEW ORLEANS — Sisters of patients with early coronary disease had an unexpectedly high prevalence of coronary artery disease themselves in a study with 102 apparently healthy women without diabetes.

The actual presence of coronary disease in these women far exceeded their estimated risk calculated by the Framingham risk formula, the major tool used in the United States to assess a person's 10-year risk of having a major coronary event. Because of this disparity between estimated risk and actual disease in women with a family history of coronary disease, such women "likely warrant being considered for noninvasive screening for subclinical atherosclerosis," Erin D. Michos, M.D., said at the annual scientific sessions of the American Heart Association.

The noninvasive screening could consist of measuring the woman's serum level of C-reactive protein, or measuring coronary calcium with CT, said Roger S. Blumenthal, M.D., director of preventive cardiology at Johns Hopkins Hospital in Baltimore and a coinvestigator in the study.

The 102 women in the study were sisters of 71 probands who had been identified with coronary artery disease when they were younger than 60 years. The

coronary disease risk of each woman was calculated using the Framingham risk score, and each woman also had her coronary calcium measured by multidetector CT. The Framingham scoring system estimates a person's risk for having a coronary disease event by using several clinical variables, such as blood pressure and total serum cholesterol level, but the score does not take into account a person's family history of coronary disease.

The average Framingham risk score for the entire group was a 2% risk for a major coronary event over the next 10 years. Only two women (2%) had intermediate-risk scores of 10%-19.9%, and none had high-risk scores of 20% or greater, said Dr. Michos of the Preventive Cardiology Center at Johns Hopkins Hospital.

Despite these very low Framingham scores, twelve women (12%) had coronary calcium scores that were greater than 100, an indicator of moderate atherosclerosis; 9 of the women with these relatively high levels of coronary calcium had Framingham scores of 5% or less. Of the 12 women with calcium scores of greater than 100, 6 had calcium scores that were greater than 400, a marker of severe atherosclerosis.

In addition, of the women with Framingham scores of 5% or less, 28 (29%) had calcium scores that were above the 75th percentile for similarly aged women. ■

## Low-Sodium Diet Keeps Arteries Flexible in Hypertensive Patients

BY PATRICE WENDLING  
Chicago Bureau

CHICAGO — For the first time, researchers have shown that reducing salt intake can protect against aldosterone-induced reduction in blood vessel flexibility in patients with resistant hypertension.

The research also suggests that measuring urinary aldosterone and sodium may help predict cardiovascular risk in patients with resistant hypertension, David A. Calhoun, M.D., reported in a poster presentation at a conference of the Council for High Blood Pressure Research.

In a study of 120 consecutive patients with resistant hypertension (uncontrolled by three or more medications) whose dietary salt intake was not restricted, Dr. Calhoun and colleagues prospectively evaluated plasma renin activity and 24-hour urinary aldosterone and sodium excretion.

Brachial artery flow-mediated dilation (FMD) also was measured prospectively in all patients by using high-resolution ultrasound. The ability of an artery to relax and expand in response to increases in blood flow is a sign of a flexible artery with a healthy endothelium. FMD is the percentage of change in vessel diameter after a tourniquet placed on the forearm is released.

Aldosteronism, defined as suppressed

plasma renin activity less than 1.0 ng/mL per hour and elevated aldosterone excretion, defined as greater than 12 mcg/24 hours, was found in 34 patients, said Dr. Calhoun of the vascular biology and hypertension program at the University of Alabama, Birmingham.

In the aldosteronism patients, there was a strong negative correlation between FMD and urinary sodium excretion (correlation coefficient  $-0.39$ ), as well as the product of urinary aldosterone and sodium (correlation coefficient  $-0.46$ ), consistent with better endothelial function in patients eating a lower-sodium diet.

The patients were divided into low- or high-sodium groups based on urinary sodium excretion of less than or greater than 150 meq/L per day. Mean FMD was higher in the 10 patients with low urinary sodium excretion than in the 24 patients with a high sodium excretion (2.6% vs. 1.6%, respectively). The groups were similar in age, body mass index, mean blood pressure, medication use, and aldosterone excretion.

In the five patients with very low sodium excretion (less than 100 meq/L per day), FMD was even higher (3.4%). This is consistent with a dose-dependent relation between sodium excretion and endothelial function, Dr. Calhoun concluded at the meeting, sponsored by the American Heart Association. ■

## FDA Approves Prescription Omega-3 Fatty Acids Capsule

BY ALICIA AULT  
Contributing Writer

The Food and Drug Administration has approved a prescription formulation of omega-3 fatty acids that offers patients at risk for heart disease a simpler way to ensure they are getting enough of the substance.

The drug, Omacor, was approved in November as an adjunct to diet to help reduce triglycerides in patients with levels of more than 500 mg/dL. Each 1-g capsule contains at least 900 mg of the ethyl esters of omega-3 fatty acids, primarily eicosapentaenoic acid (465 mg) and docosahexaenoic acid (375 mg), according to the drug's label.

That makes it much more potent than most of the over-the-counter fish oil supplements, and because it is produced according to FDA's good manufacturing practice standards, Omacor may be of higher quality than OTC supplements, said William Harris, Ph.D., director of lipid research at the Mid America Heart Institute in Kansas City, Mo.

"I think Omacor really is an advance in omega-3s," said Dr. Harris, coauthor of the American Heart Association Nutrition Committee's recommendations on fish oil and an investigator in the FDA ap-

proval trial for Pronova Biocare AS, a Norwegian company that developed Omacor. In that study, 84 patients with severe hypertriglyceridemia (with an average 900 mg/dL) were randomized to placebo or Omacor. Patients taking Omacor had a 45% drop in triglyceride levels. Dr. Harris has received no other financial support from the company.

The AHA recommended in 2002 that patients with documented coronary heart disease should consume at least 1 gram of omega-3 fatty acids daily. Ideally, the omega-3s should come from fatty fish, but the AHA said that patients could take supplements.

To lower triglycerides, patients need to consume at least 2-4 g of omega-3 fatty acids daily, according to the guidelines. Omacor or OTC fish oil should be used in conjunction with niacin or fibrate therapies, Dr. Harris added.

The label recommends that patients taking Omacor have their triglyceride levels closely monitored, and that if they don't respond within 2 months, the drug should be stopped. Patients taking anticoagulants should also be monitored, as there have been some reports of prolonged bleeding with omega-3s.

Reliant Pharmaceuticals Inc. will market Omacor in the United States. ■

## Weight-Lifting Improves Cardio Fitness as Well as Aerobic Activity

BY BRUCE JANCIN  
Denver Bureau

ORLANDO, FLA. — Pure weight training can markedly improve aerobic fitness, Erika Baum, M.D., reported at Wonca 2004, the conference of the World Organization of Family Doctors.

A 6-month structured Nautilus weight-lifting program resulted in improvements in cardiocirculatory fitness to a degree usually considered obtainable only through endurance exercises such as running, bicycling, and swimming, said Dr. Baum, a family physician at Philipps University, Marburg, Germany.

"This opens up new possibilities for cardiopulmonary-oriented exercise besides the traditional stamina sports," she noted.

Additional exercise options are desirable because some patients simply don't care for endurance exercise, which does not do much to improve muscular strength and stabilization, the physician added.

Dr. Baum reported on 31 healthy but

physically unfit 20- to 45-year-olds, including 8 women, who completed a Nautilus weight-training program involving two or three 30- to 40-minute sessions per week for 6 months. The original cohort consisted of 34 subjects, but 3 dropped out.

**Patients' mean body weight declined from 77.8 to 67.7 kg. Resting heart rate dropped from a baseline of 68.5 beats per minute to 65.6 beats per minute.**

Aerobic capacity as assessed on a graded treadmill exercise test improved by 33% over the course of 6 months from a mean baseline of 55,475 watt-seconds.

Women improved from a baseline of 47,253 watt-seconds to 62,822 watt-seconds, while endurance performance in men increased from 58,335 to 77,741 watt-seconds.

Meanwhile, mean body weight declined from 77.8 to 67.7 kg. Resting heart rate dropped from a baseline of 68.5 beats/min to 65.6 beats/min. Heart rate measured 3 minutes after stopping a maximal exercise test declined from a baseline of 108.7 to 103.1 beats/min following 6 months of training, with a larger decrease seen in women than men.

Lactic acid concentration at maximum workload remained stable over time. ■