

## Exercise Ankle-Brachial Index Aids PAD Diagnosis

BY MITCHEL L. ZOLER  
Philadelphia Bureau

STOCKHOLM — Five minutes of treadmill exercise can boost the diagnostic accuracy of the ankle-brachial index for identifying patients with peripheral artery disease, on the basis of long-term follow-up of about 700 patients.

Physicians should consider measuring a patient's ankle-brachial index (ABI) following exercise if the patient was suspected of having peripheral artery disease (PAD) but had a normal ABI of greater than 0.9 at rest, Don Poldermans, M.D., said in an interview at the annual congress of the European Society of Cardiology. But an exercise ABI was no more helpful than a resting ABI for assessing patients who had an abnormal ABI of 0.9 or less when at rest.

Five minutes of treadmill exercise raises peripheral blood pressure in patients who don't have PAD, but in patients with peripheral disease a smaller rise in peripheral pressure identifies atherosclerotic disease and endothelial dysfunction, said Dr. Poldermans, a professor of medicine at Erasmus University in Rotterdam, the Netherlands.

The finding was based on a review of the outcomes of 3,209 patients who were tested for suspected PAD at Erasmus Univer-

sity Medical Center and were then followed for an average of 8 years. All of these patients had ABI readings at rest, and again following brief treadmill exercise. The average age of the patients was 63 years, and 71% were men. The overall average ABIs of the patients were 0.65 at rest and 0.45 after exercise. On average, ABI levels fell by 25% with exercise. During follow-up, 321 of the patients died; 51% of the deaths were from cardiovascular causes.

About 700 of the patients in the study had an ABI at rest of more than 0.9, a normal level, despite their referral to the medical center because of suspected PAD. After exercise, a quarter of the patients had no drop in their ABI, and another quarter had a small drop of less than 25%. Follow-up mortality among the patients with a small drop was similar to the rate among patients with no decline in the ABI with exercise.

But among the 25% of patients whose ABI dropped by 25%-49%, mortality during follow-up was 2.5-fold higher than that in the patients with no change in their exercise ABI. Among the 25% of patients whose ABI dropped by 50% or more, mortality during follow-up was fourfold higher than that in the patients with no change, reported Harm H. Feringa, M.D., an Erasmus physician, at the meeting. ■

## Waist-Height Ratio Tops BMI As Cardiovascular Risk Factor

BY BETSY BATES  
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SAN DIEGO — Waist to height ratio is more strongly linked to cardiovascular risk than body mass index (BMI), particularly in middle age, according to a large European study that was presented at the annual meeting of the Endocrine Society.

Harald J. Schneider, M.D., of the Max Planck Institute of Psychiatry in Munich, and associates in Germany and Austria, examined weight, height, and waist and hip circumference and 18 single or combined cardiovascular risk factors in 48,353 primary care patients.

Waist to height ratio was most predictive of risk in the entire cohort in both men and women, followed by waist circumference and BMI.

Overall cardiovascular risk was highest at or above a waist to height ratio of 0.53 for women and 0.55 for men.

When investigators examined specific age groups, they found that waist to height ratio was linked most strongly to cardiovascular risk in men aged 35-54 years and women aged 55-64 years—pivotal ages for the development of cardiovascular disease.

In the other age groups, the BMI had a better association, Dr. Schneider told

this newspaper following the meeting.

These findings, however, should be interpreted cautiously because not all differences are significant in the single age groups. Moreover, it should be born in mind that this is a cross-sectional study; therefore, we cannot say which anthropometric parameter best predicts the future occurrence of cardiovascular risk factors and events, he continued.

He suggested that the cutoffs be considered an orientation rather than a strict definition of risk.

That said, study investigators have recommended using the waist to height ratio to define treatment goals for abdominal obesity in middle-aged men and women.

The study was conducted as part of the Diabetes Cardiovascular Risk-Evaluation: Targets and Essential Data for Commitment of Treatment (the DETECT study), a very large, nationally representative epidemiological study in Germany.

The DETECT study involved the examination of 55,518 patients in 3,795 primary care settings to assess prevalence of cardiovascular disease.

Dr. Schneider's study was supported by an unrestricted educational grant by Pfizer Inc. ■

## C-Reactive Protein May Alter Women's Framingham Risk Score

BY MITCHEL L. ZOLER  
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NEW YORK — The predictive value of the Framingham risk score could change substantially if serum C-reactive protein levels were included in the calculation.

An analysis of data collected on more than 15,000 women in the Women's Health Study showed that incorporating C-reactive protein (CRP) levels into the Framingham risk score significantly alters the risk estimate for nearly a third of women whose 10-year risk of a coronary event was 5%-9.9% without CRP in the risk equation. Among women whose baseline risk without CRP predicted a 10%-19.9% risk of a coronary event, adding CRP information significantly changed the risk for 42% of these women, Paul M. Ridker, M.D., said at an international symposium on triglycerides and HDL.

The redefined risk level can move either up or down, said Dr. Ridker, director of the Center for Cardiovascular Disease Prevention at Brigham and Women's Hospital in Boston.

For example, among the women whose risk of coronary disease over the next 10 years was 5%-9.9% using the standard Framingham risk score, addition of CRP level into the risk calculation caused some of the women to have a risk of less than 5%, and some women to have a risk of 10% or higher. A total of 32% of these women had their risk estimate placed outside of the 5%-9.9% range by adding their

CRP level into the risk calculation. This impact of CRP could potentially have an immediate effect on patient management and provides a rationale for immediately adding CRP to the traditional risk factors—such as age, gender, smoking status, blood pressure, and serum lipid levels, etc.—that make up the Framingham risk score.

"The issue is lifestyle change," said Dr. Ridker at the symposium, sponsored by the Giovanni Lorenzini Medical Foundation. CRP levels may be able to get primary care physicians to say to patients that they need to lose weight, watch their diet, and exercise more because patients with a high serum level of CRP may have a higher risk than their LDL-cholesterol level indicates.

"These new data show that you can refine your estimates of who to treat and who not to treat," commented Steven E. Nissen, M.D., medical director of the Cardiovascular Coordinating Center at the Cleveland Clinic Foundation.

Risk estimates that incorporate CRP levels would "do a better job of getting drug treatment to the people who would benefit from it the most," he said. Using CRP levels to help determine who needs treatment with, for example, a statin, may

cut unneeded treatment from low-risk patients and may better target treatment to higher risk patients, he said.

The Framingham risk score is used to determine which patients, who do not have established coronary disease, should start statin and aspirin therapy.

According to the Adult Treatment Panel III guidelines of the National Cholesterol Education Program, people with a 10-year risk of a coronary event of 10% or more, as calculated by the Framingham risk score, should start statin therapy if their serum level of LDL cholesterol is at least 130 mg/dL.

If their risk score is less than 10%, then statin therapy is not recommended unless their serum LDL cholesterol is 160 mg/dL or higher.

DR. RIDKER

Guidelines from the U.S. Preventive Services Task Force say that people without proven coronary disease who have a 5-year risk of 3% or more should start daily treatment with aspirin.

The Women's Health Study enrolled 15,632 healthy women with an average age of 54 into a placebo-controlled trial that assessed the efficacy of treatment with aspirin and vitamin E.

During an average follow-up of 10 years, 464 women developed a first-ever, confirmed cardiovascular end point. Among

the parameters collected at baseline were serum CRP levels.

On the basis of these data, Dr. Ridker and his associates calculated that the 20% of women with the highest CRP levels at baseline (at least 4.19 mg/dL) had a nearly threefold increased risk of a cardiovascular event during the next 10 years, compared with the 20% of women with the lowest CRP levels (less than 0.5 mg/dL).

This threefold increased risk of an event was calculated in a risk model that adjusted for all of the existing components of the Framingham risk score, showing that CRP was a significant predictor of risk, independent of the factors currently in the risk score, said Dr. Ridker, who is also a professor of medicine at Harvard University in Boston.

The analysis also showed that the ratio of total cholesterol to HDL cholesterol was at least as good for predicting the risk of the occurrence of cardiovascular events as was the ratio of apolipoprotein B-100 to HDL lipoprotein cholesterol (JAMA 2005;294:326-33).

The finding showed that "we get all the information that we need from the ratio of total cholesterol to HDL cholesterol and ... don't need fancy, more expensive lipid measures like apo B-100," Dr. Ridker told this newspaper.

Dr. Ridker is a coinventor on patents held by Brigham and Women's Hospital that relate to the use of inflammatory biomarkers in cardiovascular disease. ■



Knowing a woman's C-reactive protein level can move her risk level up or down.