

Media Contact: Sandra Van
Telephone: 1-800-880-2397
E-mail: sandy@vancommunications.com

EMBARGOED UNTIL 4 P.M. EDT on SEPT. 7, 2004

Citation: *Journal of the American Medical Association*, September 8: “Relationships of Physical Activity vs Body Mass Index With Coronary Artery Disease and Cardiovascular Events in Women.”

HIGHLIGHTS:

Although excess body weight is associated with numerous heart disease risk factors, the body mass index (BMI) appears to be a poor predictor of both existing coronary artery disease and future risk of adverse events in women. A more valuable tool may be a self-reported assessment of physical activity and functional capacity. For heart disease prevention, the tendency to focus on body mass, waist circumference, waist-hip ratio and waist-height ratio fails to address the related but more important lack of physical fitness. The results of a new study appear in the September 8 issue of the *Journal of the American Medical Association*.

ACTIVITY LEVEL PREDICTS AND PREVENTS HEART DISEASE IN WOMEN BETTER THAN FOCUS ON WEIGHT

LOS ANGELES (Embargoed Until 4 p.m. EDT on Sept. 7, 2004) – Although excess weight is a recognized risk factor for the development of cardiovascular disorders, a woman’s level of physical activity appears to be a more useful predictor of existing coronary artery disease and future cardiovascular events such as congestive heart failure, unstable angina and heart attack, according to a study conducted at four academic medical centers and sponsored by the National Heart, Lung, and Blood Institute (NHLBI).

Study results appear in the September 8 issue of the *Journal of the American Medical Association (JAMA)*.

“Using such measures as body mass index, waist circumference, waist-hip ratio and waist-height ratio, many studies have shown that being overweight increases cardiovascular risk. Few studies, however, have examined the specific role of physical activity and fitness,” said senior author C. Noel Bairey Merz, MD, cardiologist, director of Cedars-Sinai Medical Center’s Preventive and Rehabilitative Cardiac Center, and director of the Women’s Health Program. “The tendency to focus only on weight as a risk factor fails to address the related but more important lack of physical fitness among overweight individuals.”

Data for the study were derived from findings among 906 women in the ongoing Women’s Ischemia Syndrome Evaluation (WISE) study, which Dr. Bairey Merz directs as principal investigator. From 1996 to 2000, 936 women with chest pain, suspected narrowing of the coronary arteries, or both were enrolled in the WISE study. They underwent evaluations, coronary angiography and any other necessary diagnostic procedures, and agreed to long-term follow-up.

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Body mass index and other “anthropometric” measures were taken, and patient data were categorized by normal weight, overweight and obesity. To assess physical activity and ability, study participants were asked to complete two standardized self-assessments – the Duke Activity Status Index (DASI) questionnaire and the Postmenopausal Estrogen-Progestin Intervention Questionnaire (PEPI-Q).

Among the 906 participants, 76 percent were categorized as overweight and 41 percent obese. But despite the fact that women in the higher BMI categories had numerous risk factors for coronary artery disease, there was no difference in the presence or severity of disease, based on angiograms.

Seventy percent of all participants had low physical activity levels, reflected in low DASI and PEPI-Q scores, and the researchers found significant associations between these values and the existence of obstructive coronary artery disease. Also, while excessive body weight did not correlate directly with increased risk of later adverse events, low activity scores did. In fact, they were found to be significant independent predictors of both adverse events and major adverse events. When analyzed by categories of weight and activity, women who were at least moderately active had significantly greater event-free survival than women with low activity scores, no matter which weight category they were in.

“Because physical fitness has beneficial effects on many factors related to cardiovascular risk – including obesity – increased activity appears to be an ideal therapy for women with coronary heart disease. The American Heart Association’s prevention guidelines recommend that women accumulate at least 30 minutes of moderate-intensity physical activity on most or all days of the week. Physical fitness assessment and intervention should be included in the management of all women at risk for heart disease,” said Dr. Bairey Merz, who holds Cedars-Sinai’s Women’s Guild Chair in Women’s Health and serves as national spokesperson for the Women’s HeartAdvantage campaign. This nationwide program is designed to help women learn more about the symptoms and treatment of heart disease and heart attacks.

“Despite the fact that excess body weight is associated with numerous risk factors including hypertension, diabetes and metabolic syndrome, we found the body mass index to be a poor predictor of both baseline angiographic coronary artery disease as well as prospective risk of adverse events,” Dr. Bairey Merz said. “Our findings suggest that self-reported level of physical activity and functional capacity are more important than weight status or body type for determining cardiovascular risk in women.”

The study was supported by NHLBI contracts N01-HV-68161, N01-HV-68162, N01-HV-68163, N01-HV-68164, U01-HL64829-01, U01-HL64914-01, and U01-HL64924-01; and by grants from the Gustavus and Louis Pfeiffer Research Foundation, the Women’s Guild of Cedars-Sinai Medical Center, the Ladies Hospital Aid Society of Western Pennsylvania, and QMED Inc.

A Magnet Nursing accredited facility, Cedars-Sinai Medical Center is one of the largest nonprofit academic medical centers in the Western United States. For the fifth straight two-year period, it has been named Southern California’s gold standard in health care in an independent survey. Cedars-Sinai is internationally renowned for its diagnostic and treatment capabilities and its broad spectrum of programs and services, as well as breakthroughs in biomedical research and superlative medical education. It ranks among the top 10 non-university hospitals in the nation for its research activities and was recently fully accredited by the Association for the Accreditation of Human Research Protection Programs, Inc. (AAHRPP).

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