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Researchers use computed tomography to study effects of fat around the heart

WINSTON-SALEM, N.C. ·With a \$1.5 million grant from the National Institutes of Health, researchers at Wake Forest University School of Medicine are exploring whether fat stored around the heart accelerates the development of atherosclerosis.

As people gain weight, fat can accumulate in the abdomen, as well as around the heart and other organs. The study will explore the hypothesis that fat around the arteries in the heart contributes to inflammation and to increased risk of fatty deposits in the vessels, which can lead to heart attacks.

"This will be a step forward in understanding more about the health effects of fat distribution," said Jingzhong Ding, M.D., Ph.D., assistant professor of internal medicine.

In addition to its role as energy storage, fat is considered to be an "organ" that produces proteins and hormones that affect metabolism and health. Ding's study is based on a new idea in medicine ·that excess fat around the heart and other organs may impair their function. Scientists have already established that excess fat in the abdomen increases the risk of diabetes, but there has been little research on whether fat that stored around other organs is harmful.

The scientists suspect that constant exposure of inflammatory proteins produced by fat around the heart may accelerate the development of atherosclerosis. They will examine data from the Multi-ethnic Study of Atherosclerosis (MESA), a \$68 million study involving 6,500 participants nationwide ·including about 1,000 participants from Forsyth County.

The study uses the latest tests, including computed tomography, ultrasound, and magnetic resonance imaging, to screen healthy men and women between the ages of 45 and 84 for early heart disease. After the initial screenings for heart disease, the study will measure the

occurrence of heart attacks, strokes and other signs of cardiovascular disease among participants.

The overall goal of the MESA study is to find the best ways to detect heart disease early, before symptoms develop. It will also try to determine which factors best predict heart disease in men and women, and in each of the ethnic groups.

Ding and colleagues will use the MESA study data to see if there is a link between fat deposits around the heart and the development of calcium deposits in the arteries which are linked to increased risk of heart attacks.

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Co-researcher on the project is Jeffrey Carr, M.D., professor of diagnostic radiology. They expect to complete the analysis by 2010.

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Wake Forest University Baptist Medical Center is an academic health system comprised of North Carolina Baptist Hospital and Wake Forest University Health Sciences, which operates the university's School of Medicine. U.S. News & World Report ranks Wake Forest University School of Medicine 18th in family medicine, 20th in geriatrics, 25th in primary care and 41st in research among the nation's medical schools. It ranks 32nd in research funding by the National Institutes of Health. Almost 150 members of the medical school faculty are listed in Best Doctors in America.
