



Scan for Heart-Attack Risk To Get a Boost

Major Medical Group Expected To Support Use of EBT Test; Measuring Calcium Build-Up

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Heart scans, the popular but controversial tests that link heart-attack risk to an accumulation of calcium in the coronary arteries, are poised to win an endorsement from the American Heart Association, which has long been skeptical of their value.

Within the next few weeks, the influential organization is planning to publish a scientific statement that will say the tests can help doctors predict which patients are at risk of future heart attacks and decide how aggressively to treat those in danger.

The guidelines are expected to apply specifically to patients at "intermediate" risk of a heart attack based on their cholesterol levels, blood pressure, age and health habits. Though it stops well short of supporting widespread screening, the document -- expected to be published in the next few weeks in *Circulation: Journal of the American Heart Association* -- is likely to spark wider use of the exams and, possibly, improved reimbursement by insurers.

In 2000, the heart association and the American College of Cardiology jointly said there wasn't enough evidence to support wide use of the scans. Since then, a number of new studies have come out suggesting that calcium scores in certain cases can help determine treatment plans for intermediate-risk patients who may be on the borderline for needing aggressive intervention.

"The science has really come a long way," says Mathew Budoff, a preventive cardiologist at Harbor-UCLA Medical Center, Torrance, Calif., and head of the writing committee that is preparing the statement. "And all of them point in the same direction."

Still, there aren't any studies showing that using the test actually leads to better results for patients. "This is a technology that is quite good at what it does -- identify coronary calcium in patients," says Robert Bonow, past president of the AHA and chief of cardiology at Northwestern University Feinberg School of Medicine, Chicago. Though he himself uses the test on some patients, Dr. Bonow adds: "We're still waiting for data that show it will change outcomes."

The tests typically cost \$250 to \$400 and are available in two different, but similar technologies: electron beam tomography or fast computed tomography scans. They measure the volume of calcium that has built up in a patient's coronary arteries -- a sign of coronary artery disease.

HEART SCANS

Some of the pros and cons of EBT and fast CT scans

- Provide vivid evidence of calcium buildup in coronary arteries, a sign that could lead to a heart attack.
- Can cost \$250-\$400, compared with as little as \$8 for a C-reactive protein test, which some doctors say is just as useful in predicting heart risk.
- Scans expose patients to radiation, though EBT uses less radiation than do fast CT scans.

The new statement will say that EBT is the preferred approach, Dr. Budoff says, because it is more accurate and exposes patients to significantly less radiation than the computed tomography, or CT, scans. Like cholesterol and blood-pressure tests, the scans yield a numerical result. But unlike those common measures of heart risk, the scans also provide doctors and patients with a vivid image of the arteries, clearly highlighting any calcium deposits in white.

"It may be the best motivational tool I've seen in getting people to change their lifestyles," says Kevin Graham, a cardiologist at Minneapolis Heart Institute in Minnesota. "When people have objective evidence of coronary disease in graphic form in front of them, they get weak at the knees."

Critics and proponents alike do say the scans have been prone to abuse. At some practices, patients without symptoms but with only slight to modest evidence of calcium have been referred for much more costly and invasive tests to look for artery blockages. "The people who do unnecessary tests are doing medicine for dollars," Dr. Graham says.

Amid aggressive marketing of the scans in some communities, the upcoming heart association statement was provoked in part by questions over which of the two types of scans is better or safer for patients, Dr. Budoff said.

The EBT devices are designed specifically for heart scans and thus have a narrower use. That has prompted some owners of scanning centers to advertise heavily to the public to pay for their investment in the machines. The CT technology is a software upgrade of conventional CT scans, which are used widely in medical evaluations and thus rarely need marketing campaigns to attract patients, says Philip Greenland, chairman of preventive medicine at Northwestern University's Feinberg School of Medicine, Chicago. Estimates are that there are about 100 EBT machines in the U.S. while there are several thousand CT scanners.

Dr. Greenland is the author of one of the recent studies supporting the usefulness of calcium scores. Currently doctors often rely on a global risk score derived from the famous Framingham Heart Study to assess a patient's chances of a heart attack within the next decade. The score is based on factors such as age, gender, total cholesterol, levels of HDL or good cholesterol, blood pressure and whether a person smokes. Some formulas also include blood sugar and family history.

Patients whose score indicates they have a 10% or lower chance of having a heart attack in 10 years are considered at low risk; those with a 20% chance or higher are at high risk, which calls for aggressive treatment to lower cholesterol and adopt healthier living habits. Patients with a 10% to 20% chance are considered at intermediate risk, where treatment is less certain.

Dr. Greenland's study, which involved 1,461 patients and was published last January in the Journal of the American Medical Association, found that in such cases, a high calcium score could push patients into the high-risk category. A low score would indicate a patient is in less danger and that diet and exercise could be sufficient to help avoid heart trouble.

Dr. Graham in Minneapolis cited the case of a healthy 39-year-old woman whose father had suffered a heart attack at age 52 and whose LDL or bad cholesterol was still a relatively high 138 after treatment with a cholesterol-lowering statin drug. The question was whether to get the LDL lower, Dr. Graham says. Her heart scan turned up calcium levels that put her in the 95th percentile for her age -- indicating higher risk. Her drug dose was increased.

Still, some physicians remain skeptical. Steven Nissen, cardiologist at the Cleveland Clinic, argues that a cheaper (as low as \$8) blood test for a marker of risk called C-reactive protein, when added to cholesterol and other data, provides plenty of information to treat intermediate-risk patients. Scanning "is an important technique, but there is a lot of hype," he says.

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