Thursday, October 9, 2008

# Testing to Foil Sudden Cardiac Death

## Tim Russert might have been helped by coronary calcium scanning, but it's fraught with controversy

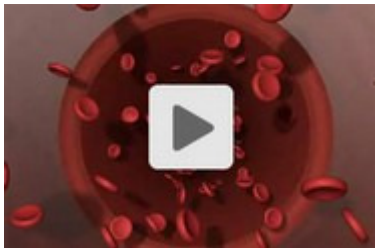
*By Bernadine Healy M.D.*
Posted June 26, 2008

A man in the prime of life, who came to symbolize Everyman, collapses one afternoon at his office and dies suddenly of a heart attack. No warning. No symptoms. Tim Russert, beloved NBC journalist who eased his way into millions of homes every Sunday morning, put a neighborly face on this shocking manifestation of coronary artery disease. Beholding this, raw and up close, in a man who practiced prevention and had good medical care, sends shivers through the baby boomer crowd. And a sense of inevitability and dark surprise lingers, as if there is no recourse. This conclusion, however, needs to be "Russerted," as pundits described his way of probing issues deeply. In fact, more can be done to anticipate and head off such catastrophe. A simple heart scan that measures calcium in the coronary arteries can make all the difference.

The conclusion that sudden deaths can't be anticipated needs to be "Russerted." (Alex Wong/Getty Images for Meet the Press)

The scan, which has been around for 20 years and can detect coronary disease in those without symptoms, is hotly debated in the medical community. It is fast, uses low-dose radiation similar to a mammogram, and is priced in the hundreds of dollars. But in a turnoff to mainstream medicine, coronary calcium scanning has been marketed directly to consumers by for-profit imaging centers, starting early on, before its usefulness was evident. Government and private health insurers are resistant to paying for it, and it has not been recommended as part of standard care. Russert had the study 10 years ago, but it was not repeated.

The approach is beautifully simple. Calcium accumulates in advanced plaques, so calcium visible in the heart's arteries indicates atherosclerosis. An exploding number of studies in the past few years have unequivocally shown that the calcium score predicts both heart attack and sudden death. As a generalization, patients with scores between 100 and 400 face three to four times the risk of a heart attack or death compared with others at the same age with a zero score. Over 400, that elevated risk more than doubles.



Video: The Dangers of Heart Disease

Most doctors rely instead on the Framingham calculator, which estimates a symptom-free person's risk of a heart attack in the next 10 years based on smoking history, blood pressure, cholesterol levels, sex, and age. It's available free online from the National Institutes of Health. Most people taking the test will have minimal or no coronary disease, though risk estimates over 9 percent should inspire vigorous preventive efforts. For some, however, coronary heart disease is sneaky, and Framingham will underestimate what lies ahead. Roughly half of those who suffer a major heart attack or sudden coronary death are symptom free. Calcium scores are additive to Framingham; they pick up the individual surprises by using X-ray vision to look inside the heart. No wonder insurance companies are scrambling to use coronary calcium scores—life insurers, that is.

For those without heart symptoms, a worrisome Framingham score might make paying for a scan worthwhile, with your doctor's guidance. Knowledge that one's own arteries have become encrusted with plaque—or are clean as a whistle—can be a mighty motivator to get or stay serious about healthful diet and lifestyle and prevention. But beyond motivation, a high calcium score points to next steps that are still noninvasive, including very aggressive preventive therapy, exercise stress testing, or even CT-angiography, a scan of the heart that will provide more detailed information. Without moving all the way to an invasive procedure, the doctor will be able to spot treacherous coronary narrowings such as the "widow maker" that is often the culprit in sudden coronary death—as it was for Russert. Only at that point would invasive diagnostic studies be indicated, probably followed by coronary bypass surgery or stenting.

Critics will say the role of screening is still unknown. Follow-up procedures might be done on too many who don't need them, so scans might not actually save lives or be cost-effective. Only a randomized controlled trial can provide certain answers, however, and that would take more than a decade. Edward Shapiro, a cardiologist at Johns Hopkins who is a leader in heart imaging, points out that for today, doctors caring for patients have to use logic based on data that are available. And for someone who feels good but knows his waist is too large, his diet too grand, his stress level too high, and his risk factors out of whack, what we have so far is compelling.

**Tags:** heart attacks | coronary artery disease | Tim Russert