

2/1/07

Dear Colleague:

Large scale screening for coronary atherosclerosis by Electron Beam CT scan in asymptomatic individuals is now recommended to allow for early identification and treatment. This necessitates a shift in our practice patterns. This letter reviews the basis for this change and conveys our support for the new recommendations

Atherosclerotic cardiovascular disease affects more than a third of the U.S. population, at an estimated cost of more than \$400 billion a year. The disease is a silent killer, responsible for nearly 40 percent of our nation's deaths. Mortality is so high because, for the vast majority of patients, the first symptom is a myocardial infarction – often a fatal one. For the remaining patients who exhibit less-severe symptoms or whose disease is revealed by an abnormal stress test, stent placement or bypass grafting is often required. Yet if the disease is discovered early enough, less invasive therapies and lifestyle changes can arrest or even reverse the damage.

Screening for early-stage asymptomatic breast, cervical, prostate and colon cancer has been widely accepted, but there have been no national screening guidelines for detection of subclinical atherosclerosis, a disease that is responsible for more death and disability than all cancers combined. **Now two new consensus statements strongly support calcium screening using computed tomography (CT) for early detection of cardiovascular disease (CVD).**

In July, the SHAPE Task Force recommended “**non-invasive screening of all asymptomatic men 45-75 years of age and asymptomatic women 55-75 years of age (except those defined as very low risk) to detect and treat those with subclinical atherosclerosis.**” Coronary artery calcification evaluation by computed tomographic scanning and carotid artery intima-media thickness and plaque by ultrasonography are the recommended methods of evaluation given their “**proven value to provide prognostic information regarding the future risk of heart attack and stroke.**”

In October, the American Heart Association released a Scientific Statement which states:

“In summary, cardiac CT has been demonstrated to provide quantitative measures of [calcified coronary plaque (CACP)] and [noncalcified plaque (NCP)]. CACP, as determined by cardiac CT, documents the presence of coronary atherosclerosis, identifies individuals at elevated risk for myocardial infarction (MI) and CVD death, and adds significant predictive ability to the Framingham score (an index of traditional CVD risk factors). **Data suggest that cardiac CT may improve risk prediction, especially in individuals determined to be at intermediate risk according to the NCEP ATP III criteria and for whom decisions concerning prevention strategies may be altered based on the test results.**”

The report also notes that “On the basis of the substantial validation data, **EBCT [electron beam computerized tomography, or EBT] remains the reference standard for calcified coronary plaque measurement**” and concludes, EBCT has undergone a 20-year period of testing for reliability and validity and is now established as a useful technique in identifying individuals with or at risk for coronary heart disease. They further concluded the while additional studies are needed to evaluate the usefulness of MDCT technology, the radiation doses, reproducibility, and validation must be taken into account.

¹ “Heart Disease and Stroke Statistics – 2006 Update,” *Circulation*. 2006;113:e85-e151

² *Ibid.*

³ From Vulnerable Plaque to Vulnerable Patient—Part III: Executive Summary of the Screening for Heart Attack Prevention and Education (SHAPE) Task Force Report, *Am J Cardiol* 2006;98[suppl]:2H-15H

⁴ Assessment of Coronary Artery Disease by Cardiac Computed Tomography, *Circulation*. 2006;114:1761-1791

In light of these two consensus statements, we strongly recommend appropriate patient screening by EBCT – the gold standard for the assessment of coronary artery calcification. Of the two EBCT scanners in Washington state, the one at the Heart Health Center in Bellevue is the only one where board certified Cardiologists review the scans and provide clinical recommendations. While non-EBCT scanners (Spiral CT and Multidetector scanners) can also evaluate coronary calcification, they require greater radiation and have not been as extensively evaluated for this purpose as EBCT.

We are on the threshold of a new era in preventive cardiology; in which we can directly assess the presence and extent of early-stage disease to better define the risk of cardiovascular events. Because we no longer have to rely on educated guesses informed by cardiac risk factors, or wait for end-stage disease to manifest itself, this new era gives us the tools we need to save lives.

Sincerely,

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