A Healthy Heart

Cardiovascular disease is still the No. 1 killer of American men.
New screening tests may help millions avoid the emergency room.

By David Noonan

At 57, Constantine Xinos was in pretty good health. The criminal defense attorney from Oak Brook, Ill., had two classic risk factors for cardiovascular disease – high blood pressure and a total cholesterol level around 230 – but he was taking medicine to control both and had never experience chest pain, shortness of breath or any other symptoms of heart trouble. He wasn't at low risk for a heart attack, but he wasn't at high risk either. Like millions of other American men, he was what the experts might call an "intermediate-risk individual." Then one day, after hearing a radio ad, he decided to have his coronary arteries checked in a procedure known as an electron-beam tomography (EBT) scan.

"About three weeks later," he recalls, "I get a letter that has everything but a black border on it." The scan showed that one of Xinos's arteries was seriously blocked by calcium deposits. After consulting a cardiologist, he underwent angioplasty and had two stents emplaced. Five years later Xinos has no doubts about the value of coronary-artery scans. "I'm not saying I would have fallen over," he says, "but I was walking around 90 percent clogged and didn't know it. People ignore these things and all of a sudden they go face down in a pan of pizza. Then everybody says 'Gee, you know, he never had these problems'."

As it turns out, Xinos's faith in the technology was not unfounded. Just last month, the largest-ever study of EBT scans found that they are effective in helping doctors predict heart attacks and other cardiac events among patients at intermediate risk, like Xinos. It was the latest in a wave of recent developments that could lead to important changes in the way we diagnose, treat and prevent coronary heart disease (CHD), which remains the single leading cause of death among American men, killing more than 260,000 in the year 2000. Exciting fronts are opening up in the endless was against CHD as researchers

look at an array of newer risk factors, from intriguing details about cholesterol (Ever heard of small LDL? How about HDl2B?) to the complicated role vessel inflammation plays. The hope is that this ever more nuanced picture of the disease process will enable doctors to better assess which patients are at risk for heart disease, stop heart attacks before they happen and develop more effective, customized treatment plans.

An understanding of the classic risk factors is still essential, but it seems clear we are entering a new phase in the quest for heart health. And cardiologist Robert Superko is one of those leading the way. Superko, whose new book, “Before the Heart Attacks,” offers a comprehensive guide to the latest ideas in preventing CHD, says the expanding list of risk factors reflects the complexity of cardiovascular disease. He uses the newer risk factors (in addition to the traditional ones) to create what he calls “cardiac fingerprints,” unique clinical profiles of his patients. “I will not treat you as a member of one of these 10,000-person clinical studies,” he says. “I will treat you as an individual.” Dr. George Kondos, who directed the large study of EBT scans, shares Superko’s enthusiasm for the evolving approaches to CHD. For Kondos, a cardiologist at the University of Illinois at Chicago, it’s all about detecting heart disease before the patient develops symptoms. “The traditional risk factors have withstood the test of time, and they are very important,” says Kondos. “But still, up to a third of people with heart disease don’t have those.” For those people, there are some promising new developments in the detection and prevention of CHD that could save thousands of lives.

A high cholesterol level is perhaps the best-known risk factor for heart disease. Everybody knows his cholesterol level, it seems, and almost everybody, it also seems, is taking one of the cholesterol-lowering drugs known as statins, the top-selling drugs in the United States. Twenty years ago total cholesterol was the only number readily available to the typical patient. A few years later, with refinements in testing, one number became three numbers as total cholesterol was joined by good cholesterol (HDL) and bad cholesterol (LDL). Today, thanks to further advances in technology, we know more than ever about what is in fact a maddeningly complex group of molecules.

One of the most lethal forms of cholesterol that can now be tested for is called small LDL. People with a lot of this dense form of LDL are said to the LDL Pattern B and are at a dramatically increased risk of heart disease, says Superko, whose book spells out exactly who should consider being screened for small LDL and other risk factors. Small LDL, an inherited trait, is more common in people who are overweight or diabetic, but it can also show up in those who are fit. One of the nastier details, according to Superko: small LDL speeds the progression of heart disease, so someone with heart disease and small LDL will get worse twice as fast as someone with heart disease but no small LDL. On the upside, and, in some cases, with such drugs as niacin and fibrates.

If small LDL is the kind of cholesterol you definitely don’t want to have, then HDL2B is the kind you definitely do want to have, and the more the better. HDL2B is a superefficient type of HDL, the good cholesterol that helps clear partially blocked arteries. HDL2B, the strongest possible protection against heart disease, is measured as a percentage of total HDL, and Superko likes his patients to be above 35 percent (for

postmenopausal women, above 45 percent). Low HDL2B is often found in smokers and overweight, inactive people. It can be raised with improved diet, exercise and weight loss.

As if they needed it, people at risk for heart disease got something new to worry about last November, when The New England Journal of Medicine published a major study about inflammation. The report compared C-Reactive Protein (CRP) – a blood marker for inflammation – and LDL cholesterol as predictors of heart disease. CRP was found to be a better predictor. The big question, then and now: who needs to get tested for CRP? The answer: hmmm. “It’s not clear exactly yet which patients need CRP screening,” says Dr. Robert Bonow, president of the American Heart Association. The problem is, elevated CRP can be caused by a lot of things, from infections to lack of exercise to physical exertion. If you are already at very low risk for heart disease, Bonow says, and elevated CRP level is not a problem. And if you are already at very high risk, you don’t need a CRP screen to know you’ve got a problem. “Where it could help is in people who have one or two abnormal risk factors but everything else looks OK,” say Bonow. Some doctors treating patients in this intermediate-risk group might be on the fence about how aggressive to be, and an elevated CRP could help them make up their minds, he says. When Superko screens for CRP, he measure it on three separate occasions, three weeks apart, to establish clinical significance in an individual patient.

Like CRP screening, EBT scans of the coronary arteries are unnecessary for those at low risk of heart disease and redundant for those at high risk. “Men about the age of 40 and women above the age of 50 with at lease one traditional risk factor,” says Kondos, describing the population of candidates for the procedure. Kondos, who regularly cites studies showing that half of deaths due to heart disease occur in people with no symptoms, notes that EBT scans do more than simply identify a risk factor. “What you are doing is actually looking at and measuring the disease,” he says. More specifically, the EBT scan measure the buildup of calcium in the arteries that supply the heart muscle with blood. The more calcium, the high the score (more than 400 is abnormal), and the higher the score, the greater the risk of heart attack or some other cardiac event. While Kondos’s study, which appeared in Circulation: Journal of the American Heart Association, supports the efficacy of coronary-artery scans, it may also lend some much needed legitimacy to the scanning industry, which has been criticized in the past for marketing a variety of scans to healthy consumers who don’t really need them.

As for those not-so-healthy consumers who might be confused about all of these new developments in cardiology, well, there’s still the tried and true. “Although we are certainly interested in identifying the importance of some of these newer risk factors, I think we need a little more time and some more science to figure out exactly where they fit in,” says Bonow. “Meanwhile, if we were just to do better in controlling the more standard risk factors – such as high blood pressure, diabetes, high cholesterol – in more people, then we could make a major impact in the number of people who are dying each year from heart disease and strokes.” Not to mention all the people who are merely worrying.