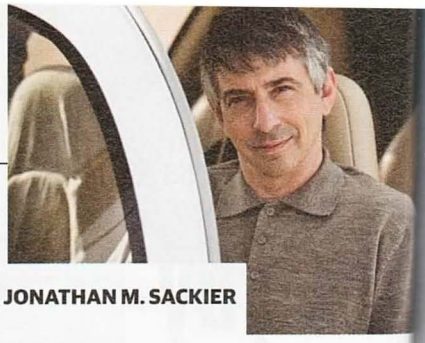

BY DR. JONATHAN M. SACKIER

The grim reaper versus $49

Tests to keep your heart beating

WHAT WILL LIKELY kill you? Heart disease—the most common cause of death in America. "But I eat well, exercise, and don't smoke, so I'm OK, right?" That ain't necessarily so.

Your heart pumps blood to the lungs, where oxygen is collected and carbon dioxide (CO_2) dumped. Upon returning, it is squirted to every finger and toe, organ and tissue delivering nutrients and oxygen, collecting refuse and CO_2, the cycle repeating 72 times a minute. The first, freshest, friskiest blood flows through coronary arteries, tubes supplying the heart muscle with fuel required to do its important work.

Bad genes, cigarettes, fatty diets, obesity, and sedentary lifestyle cause arterial gumming up with atheroma ("porridge tumor") limiting blood flow, like plumbing blocked with hard water deposits. Such atheroma plaques cause cardiovascular (heart vessel) disease impairing downstream organ function. If seriously compromised, heart tissue dies—myocardial infarction or heart attack. Eventually plaques harden as calcium is deposited causing vessel walls to become rigid and non-compliant.

Clues that disease is present include family history, high blood pressure, chest pain, or breathlessness on exertion. In some tragic cases there are absolutely no symptoms—and then, sudden death. As patients, our responsibility is to live a healthy lifestyle and have regular checkups. If symptoms appear, seek prompt medical attention. Doctors, suspecting clogged arteries, will perform a history, physical examination, and tests to include chest X-ray, electrocardiogram (ECG) to review cardiac rhythm, and blood tests to measure blood fats and cardiac muscle damage.

After prescribing medication to control blood pressure, heart rhythm, and raised cholesterol, a stress test may be required; heart rhythm and blood pressure are measured as heart rate is raised either by exercising on a treadmill or by injecting a drug to increase heart rate (the FAA usually prefers the former). ECG changes may reveal not enough blood is bathing heart muscle, implying coronary artery disease. An angiogram might ensue, whereby a catheter is maneuvered from a small groin incision up into the heart and a chemical is injected, which shows up on X-ray. This creates a coronary artery map, identifying narrow or occluded areas which can then be expanded with balloons, propped open with a stent, or require a surgical bypass.

What if none of this applies to you—the 53-year-old nonsmoker? You work out and eat well, blood pressure and lipids are normal, but your uncle died of a heart attack. Look at the first sentence again—heart disease is the most likely source of your demise. Telling your doctor you merely have concerns about heart disease, it is unlikely you will qualify for insurance coverage for a stress test—and even if you do have one it may well be normal. But widowmaker plaques could be lurking inside your chest, causing no symptoms until the day one becomes inflamed, ulcerates, pops up, and blocks the artery with dire consequences—two column inches in the local paper and six feet of undesirable real estate.

The U.S. Preventive Services Task Force may state that screening for heart disease probably makes no economic sense—which I find baffling in this country, land of the free and home of the brave. Talk to your doctor about whether you should undergo a CT heart scan, which looks for calcification in the coronary arteries. It is not covered by insurance, but takes five minutes and costs around $49. The radiation dose is miniscule, and if the result shows you have little or no calcium, your risk of heart disease is far lower. Of course, if calcium is seen, this might lead to more tests. As with any medical test there are false positives and negatives, but I had this examination as a sensible precaution given the consequences of missing a diagnosis.

At St. Vincent Heart Center of Indiana, Dr. Joseph George, a radiologist with special expertise in this modality, told me that they have screened countless first responders—many fit young men in their 30s—and "although the yield of bad disease is low, wouldn't you want to know?" He also talked of other advances that will change how we diagnose and treat this heartfelt killer. For pilots having this test? The FAA does not recognize CT heart scans for aeromedical purposes and if calcium is seen, third class certificate holders need a Bruce stress test; second class, a maximal test. If negative, report it at your next flight physical. A pain in the neck, I know, but better than a pain in the chest; keeping your heart beating beats the alternative. **AOPA**

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DR. JONATHAN SACKIER will present health-related seminars at the 2013 AOPA Aviation Summit in Fort Worth, Texas, October 10-12.