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# Life Preserver?

BY LAURA BEIL

*A sea of uncertainty surrounds screening's role in saving lives.*

At 39, Brett Troia of Panama City, Florida, should not have been thinking about prostate cancer. The U.S. Navy engineering technician was a triathlete in better shape at the brink of 40 than he was at 20. But after his father, older brother, and two sisters were diagnosed with varying forms of cancer, he'd had enough. He asked a doctor to check him out up and down, going in for, as he says, a 60,000-mile checkup a -little early. Part of the workup was a prostate-specific antigen test.

The first PSA was 1.6. Most doctors consider anything below 4 nothing to be alarmed about. A year later, the number had dipped to 1.2. Then in December 2008, just after Troia turned 41, his PSA rose to 2. The doctor didn't like the jump, and ordered a biopsy. Of the 12 samples of his prostate, one came back malignant.

In April, Troia had his prostate removed. Today, he's recovering, dealing with the common symptoms of a prostatectomy, including bouts of incontinence and impotence. Still, Troia has no regrets, noting that a PSA would not have even been discussed until age 50. "That's another nine years," he says. "Who knows how far it would have grown?"



A prostate cancer screening test led to triathlete Brett Troia's diagnosis at age 41. Photo by Heather Walker.

Troia is unwavering in his belief that the PSA test saved his life, and could save the lives of other men. This could be true. But data have not found PSA screening to be an undisputed lifesaver. In fact, few cancer screening tests—cervical, breast, and colon cancers are the exceptions—have proven themselves to dramatically lower the odds of dying from cancer compared with people who are not screened.

For the past two decades, doctors have debated the value of mammograms and colonoscopy, as studies showing they result in a reduction in cancer-related deaths continue to be challenged because of methodological flaws. Even melanoma screening has not been proven to lower mortality rates. The latest controversy over screening flared after two studies on PSA testing appeared in March in *The New England Journal of Medicine*, one finding that PSA screening lowered death rates somewhat, and another finding the test made little difference.

“No screening test is perfect. It generates wrong answers in both directions,” says Ned Calonge, MD, chief medical officer of the Colorado Department of Public Health and Environment. Calonge heads the U.S. Preventive Services Task Force, an independent expert panel that issues guidelines on behalf of the federal government. Last year, the task force recommended that men over 75 not be screened for prostate cancer.

“There are five things that can happen with cancer screening, and four of them are bad,” Calonge says. Most people know only the one, hoped-for benefit: detecting cancer at an earlier, presumably more treatable stage. “We never think about the ramifications,” he says. Yet they exist: A test can say you have cancer, when you don’t. It can say you don’t have cancer, when you really do. It can find cancer, but the cancer would never have been life-threatening, subjecting you to all the side effects of treatment with no benefit. Or it can make no difference, only adding time and expense to an already overburdened health care system.

Screening can fail because of the nature of cancer and the shortcomings of current technology. Because aggressive tumors—the ones you most want to find—tend to grow rapidly, screening is less likely to pick them up. “What happens is that screening is most likely to pick up the ones that are growing slowly,” says Lisa Schwartz, MD, of Dartmouth Institute for Health Policy and Clinical Practice in New Hampshire. And slow-moving tumors are generally less deadly and may never even clinically manifest during a person’s lifetime.

☒ There are five things that can happen with cancer screening, and four of them are bad. ☒

—Ned Calonge, MD

To save lives, screening also has to detect cancer at an earlier stage than symptoms would develop—and the treatment needs to work better earlier than later in the disease. The test also has to be sensitive enough not to miss malignancies. The problem is that screening tests are sometimes *too* sensitive, picking up cancers that would never cause symptoms or threaten life, even when untreated. So Schwartz believes that current screening can make “survivors” out of many people who should not have been patients so soon, if ever.

Think of it this way: Imagine an asteroid is hurtling toward Earth, with impact at noon tomorrow. Satellites from an early warning system could have discovered it a year ago and tried to destroy it, giving a year’s “survival” with the asteroid. More sophisticated technology may have found it farther out in space, say seven years ago, giving seven years of “survival” with the asteroid. Either way—a one-year survival or a seven-year survival—still means calamity at noon. Early detection didn’t mean we lived longer; it just meant we knew sooner, and tried harder to stop it. Or we were working feverishly to stop it, and some other global cataclysm occurred first.

Given these realities, the best measure of a screening test is not how long people live after early detection, but lives spared. Lower mortality rates signal that

catching the cancer early saved lives that would otherwise have been lost. Which brings us to the latest uproar over PSA testing. The two randomized trials compared mortality—not survival time—of men who were screened with men who were not. In one, men in Europe tested every four years had a mortality rate that was about 20 percent lower. A second study involving more than 76,000 American men did not find a benefit with screening. (In that study, however, 44 percent of the men had PSAs before the study began, and more than half of men in the control group had PSA screening by the study's end, which would have contaminated the comparison.)

“Pro-screenerers say it saves lives, and there is data to say that is true,” says prostate cancer specialist Oliver Sartor, MD, of Tulane University Medical Center in New Orleans, noting that metastatic prostate cancer rates have fallen since the introduction of PSA screening. “But you’re going to detect cancers that don’t need to be treated. Everybody is going to have to recognize that the other side has valid points.”

Some screening tests carry greater risks than others. The use of spiral CT scans to detect lung cancer has been wrought with controversy because the screening exposes patients to radiation, is costly, and produces a large number of false-positive findings that can lead to invasive testing, surgery, and overdiagnosis. The benefits of the test are still not known. No randomized trial has found that spiral CTs save lives, but most experts are waiting for larger studies to form an opinion, particularly a federally funded trial of 50,000 volunteers with results expected by 2010.

Mammography has been shown to lower mortality from breast cancer by about 20 to 30 percent. Although doctors and professional groups recommend screening in older women, Dartmouth’s Schwartz wishes that mammography were presented as a decision rather than a prescription, and with greater perspective on the benefits. Lowering mortality 20 percent means that if 30 women out of 1,000 would normally die of breast cancer, screening would save six of them. But 24 would still be lost, even with mammograms. “I think the current model is, ‘If you don’t do this, you should have your head examined,’ ” she says. “Should we move from persuasion to information?”

Yet Schwartz, who is of recommended mammogram age, acknowledges the choice to undergo screening can be perplexing and stressful. Sometimes, being told you need a mammogram is more comforting than being asked if you want one. “These things are really hard calls,” she says. “I find my own personal decisions really challenging.”