



One Word Can Save Your Life: No!

New research shows how some common tests and procedures aren't just expensive, but can do more harm than good.

by [Sharon Begley \(/contributors/sharon-begley.html\)](/contributors/sharon-begley.html) | August 14, 2011 10:0 AM EDT

Dr. Stephen Smith, Professor emeritus of family medicine at Brown University School of Medicine, tells his physician not to order a PSA blood test for prostate cancer or an annual electrocardiogram to screen for heart irregularities, since neither test has been shown to save lives. Rather, both tests frequently find innocuous quirks that can lead to a dangerous odyssey of tests and procedures. [Dr. Rita Redberg \(/newsweek/blogs/the-gaggle/2010/03/11/who-administered-obama-s-physical-not-sharon-begley.html\)](/newsweek/blogs/the-gaggle/2010/03/11/who-administered-obama-s-physical-not-sharon-begley.html), professor of medicine at the University of California, San Francisco, and editor of the prestigious *Archives of Internal Medicine*, has no intention of having a screening mammogram even though her 50th birthday has come and gone. That's the age at which women are advised to get one. But, says Redberg, they detect too many false positives (suspicious spots that turn out, upon biopsy, to be nothing) and tumors that might regress on their own, and there is little if any evidence that they save lives.

These physicians are not anti-medicine. They are not trying to save money on their copayments or deductibles. And they are not trying to rein in the nation's soaring health-care costs, which at \$2.7 trillion account for fully one sixth of every dollar spent in the U.S. They are applying to their personal lives a message they have become increasingly vocal about in their roles as biomedical researchers and doctors: more health care often means worse health. "There are many areas of medicine where not testing, not imaging, and not treating actually result in better health outcomes," Redberg says. In other words, "less is more." *Archives*, which is owned by the American Medical Association, has been publishing study after study about tests and treatments that do more harm than good.

That less health care can lead to better health and, conversely, that more health care can harm health, runs counter to most patients' conviction that screenings and treatments are inherently beneficial. That belief is fueled by the flood of new technologies and drugs that have reached the market in the past two or three decades, promising to prevent disease and extend life. Most of us wouldn't think twice if our doctor offered a test that has the power to expose a lurking tumor, or a clogged artery, or a heart arrhythmia. Better to know—and get treated—than to take any risks, the reasoning goes.

In fact, for many otherwise healthy people, tests often lead to more tests, which can lead to interventions based on a possible problem that may have gone away on its own or ultimately proved harmless. Patients can easily be fooled when a screening test detects, or an intervention treats, an abnormality, and their health improves, says cardiologist Michael Lauer of the National Heart, Lung, and Blood Institute. In fact, says Lauer, that abnormality may not have been the cause of the problem

or a threat to future health: “All you’ve done is misclassify someone with no disease as having disease.”



Photo by Hugh Kretschmer for Newsweek

From PSA tests for prostate cancer (which more than 20 million U.S. men undergo every year) to surgery for chronic back pain to simple antibiotics for sinus infection, a remarkable number and variety of tests and treatments are now proving either harmful or only as helpful as a placebo.

This realization comes at a time when Medicare has emerged as a fat target in the debate over taming the deficit, with politicians proposing to slash costs by raising the age of eligibility or even eliminating the program. Experts estimate that the U.S. spends hundreds of billions of dollars every year on medical procedures that provide no benefit or a substantial risk of harm, suggesting that Medicare could save both money and lives if it stopped paying for some common treatments.

“There’s a reason we spend almost twice as much per capita on health care [as other developed countries] with no gain in health or longevity,” argues Dr. Steven Nissen, the noted cardiologist at the Cleveland Clinic. “We spend money like a drunken sailor on shore leave.”

Many medical advances, of course, have saved lives and eased suffering for millions of people. Screening tests like mammograms can lead to early treatment of breast cancer, especially for women with hereditary risk or a strong family history of the disease. For cancer patients who report back pain, MRIs can prove invaluable for spotting tumors that have metastasized to the bones, allowing doctors to intervene before it’s too late. The years between 1980 and 2004 saw a 50 percent decline in the death rate from coronary heart disease thanks to better treatments and drugs that reduce cholesterol and blood pressure. At least 7,300 lives are saved every year thanks to colonoscopies.

The dilemma, say a growing number of physicians and expert medical panels, is that some of this same health care that helps certain patients can, when offered to everyone else, be useless or even detrimental. Some of the most disturbing examples involve cardiology. At least five large, randomized controlled studies have analyzed treatments for stable heart patients who have nothing

worse than mild chest pain. The studies compared invasive procedures including angioplasty, in which a surgeon mechanically widens a blocked blood vessel by crushing the fatty deposits called plaques; stenting, or propping open a vessel with wire mesh; and bypass surgery, grafting a new blood vessel onto a blocked one. Every study found that the surgical procedures didn't improve survival rates or quality of life more than noninvasive treatments including drugs (beta blockers, cholesterol-lowering statins, and aspirin), exercise, and a healthy diet. They were, however, far more expensive: stenting costs Medicare more than \$1.6 billion a year.

If that finding makes you scratch your head—how can propping open a narrowed blood vessel not be wonderfully effective?—you're not alone. Many cardiologists had the same reaction when these studies were published. It turns out that the big blockages that show up on CT scans and other imaging, and that were long assumed to cause heart attacks, usually don't—but treating them can. That's because when you disrupt these blockages through surgery, you “spray a whole lot of debris down into the tiny blood vessels, which can trigger a heart attack or stroke,” says Nortin Hadler, a professor of medicine at the University of North Carolina, whose book on overtreatment in the elderly, *Rethinking Aging*, will be published next month. Many of the 500,000 elective angioplasties (at least \$50,000 each) performed every year are done on patients who could benefit more from drugs, exercise, and healthy eating.

New technology has sometimes made the problem more acute. Where once arterial blockages were detected by chest X-ray, now doctors can use cardiac CT angiography, which shows the heart and coronary arteries in dramatic 3-D. When it was introduced a decade ago to screen for cardiovascular disease, it seemed almost miraculous: a 2005 cover of *Time* trumpeted that it could “stop a heart attack before it happens.” Difficult as it is to believe, however, there can be such a thing as too much information, especially from new imaging technology. “Our imaging and diagnostic tests are so good, we can see things we couldn't see before,” says Lauer of the National Heart, Lung, and Blood Institute. “But our ability to understand what we're seeing and to know if we should intervene hasn't kept up.”

In a recent study, John McEvoy, a heart specialist at Johns Hopkins Medical Institutions, and colleagues found that 1,000 low-risk patients who had CT angiography had no fewer heart attacks or deaths over the next 18 months than 1,000 patients who did not undergo the screening. But they did have more drugs, tests, and invasive procedures such as stenting, all of which carry a risk of side effects, surgical complications, and even death. The CT itself has a potential side effect: by exposing patients to high levels of radiation, it raises the risk of cancer. “Low-risk patients without symptoms don't benefit from CT angiography,” says McEvoy, though high-risk patients with heart disease might.

The Cleveland Clinic's Nissen has seen firsthand what happens when doctors, armed with too much information, perform what turn out to be unnecessary procedures. In 2009 a 52-year-old woman with chest pain underwent a cardiac CT at a community hospital. Neither her LDL (bad) cholesterol nor her C-reactive protein (another risk factor for heart disease) were elevated. But since the CT showed several coronary plaques, her physicians performed coronary angiography. Complications ensued, and the woman wound up undergoing more procedures, one of which tore an artery. She eventually went to the Cleveland Clinic for a heart transplant—not because she had heart disease when it all started, says Nissen, but because of the cascading interventions triggered by the CT.

Nissen regularly counsels asymptomatic, low-risk patients against having cardiac CT, echocardiograms, and even treadmill stress tests; studies show they produce many false positives, leading to risky interventions. Even a clean scan can lead to worse health, if it makes people believe

they can eat whatever they want and stop exercising. “I’ve had colleagues gain weight after a negative heart scan,” apparently figuring they were home free, says UCSF’s Redberg.

Radiologists and other physicians who diagnose or treat back pain have their own version of the CT: it’s called magnetic resonance imaging, or MRI. Just as cardiac CT makes sense in principle, so does getting a high-resolution image of the spine if someone is suffering lower back pain with no clear cause. An MRI typically costs about \$3,000 and is designed to spot everything from bulging discs to hairline fractures. Find any of those things, the logic goes, and you can treat the problem surgically. But there’s a fundamental flaw: clinical trials have shown that back surgery, including vertebroplasty (putting special cement on a tiny spinal fracture) and spinal fusion, is no more effective at alleviating ordinary pain than plain-old rest and mild exercise. But like any surgery, it carries risks. Last year the American College of Physicians warned that “routine imaging [for low back pain] is not associated with clinically meaningful benefits but can lead to harms.” That’s because the “abnormalities” seen in an MRI often have nothing to do with the back pain (people without pain have them, too), but seeing something on a scan makes a physician feel compelled to get rid of it. “There is a longstanding fallacy among physicians that if you find something different from what you perceive to be ‘normal,’ then it must be the cause of the patient’s problem,” says UNC’s Hadler.

Dr. James Goodwin, a geriatrician at the University of Texas Medical Branch, cites an extreme example of this fallacy in the case of a frail 84-year-old woman who was told by her gastroenterologist that it was time for another colonoscopy, just a few years after her last one showed no problems. She died when the procedure perforated her colon. Though this outcome is rare, the recommendation that led to the woman’s death is all too common, says Goodwin, even though expert groups advise against screening colonoscopies for anyone over 75 or who has had a normal result within the past 10 years. He says he was dumbfounded when his elderly patients kept receiving “reminders” from their gastroenterologists telling them it was time for another colonoscopy—seven or five or even two years after their last normal one.

Both curious and concerned, Goodwin launched a study of Medicare patients. Fully 46 percent had a screening colonoscopy fewer than seven years after a negative one. Making matters worse, many of them were over 80.

Medical practice also suffers from a kind of mission creep: if a treatment works in severe disease, some doctors assume it will work in milder disease. But that is not necessarily so. Antidepressants, for instance, have been shown in randomized trials to help with severe depression but not with moderate or mild depression, yet are widely prescribed for those conditions. Drugs called proton pump inhibitors (PPIs) are effective against gastric reflux and rare esophageal diseases as well as some ulcers, but at least half, and possibly 70 percent, of the 113 million U.S. prescriptions for PPIs each year are for conditions they don’t help, such as run-of-the-mill stomachaches. PPIs can cause bone fractures, severe and hard-to-treat bacterial infections, and pneumonia. Millions of people are being put at risk unnecessarily, which is one reason treating adverse drug reactions costs the U.S. \$200 billion a year.

Statins, common cholesterol-reducing drugs, may also not benefit some people who are taking them. Statins are proved to help people with both heart disease and high cholesterol, but not those with just high cholesterol. The drugs are nevertheless widely prescribed to patients who fit the latter description, despite adverse effects, such as severe muscle disease in up to 20 percent of patients. Similarly, cardiac resynchronization therapy, a special pacemaker that causes the right and left ventricles to beat in sync, can save the life of a patient with congestive heart failure whose ventricles

are at least 150 milliseconds out of sync. Yet patients with a mistiming of 120-150 milliseconds are receiving the devices.

Low-tech tests should sometimes be avoided, too. In an *Archives* paper published this month, a panel of physicians, led by Brown's Smith, announced its first list of tests and treatments that should be dropped altogether for certain patients and ailments: antibiotics for sinus infections, imaging for low back pain, osteoporosis screening for women under 65, and electrocardiograms and other cardiac screening in low-risk patients. Even blood panels for healthy adults made the list. Today's comprehensive blood tests measure 15 or so enzymes, proteins, lipids, and the like. Yet by chance alone, if you test for 20 things, something will fall outside the bounds of "normal," often due to simple lab error.

Many doctors don't seem to be getting the message about useless and harmful health care. Medicare pays them more than \$100 million a year for screening colonoscopies; some 40 percent are for people in whom they will almost certainly harm more than help. Arthroscopic knee surgery for osteoarthritis is performed about 650,000 times a year; studies show that it, too, is no more effective than placebo treatment, yet taxpayers and private insurers pay for it. And although several large studies, including the Occluded Artery Trial in 2006, have shown that inserting a stent to prop open a blocked artery more than 24 hours after a heart attack does not improve survival rates or reduce the risk of another coronary compared with drugs alone, the practice continues at a rate of 100,000 such procedures a year, estimate researchers led by Dr. Judith Hochman, a cardiologist at New York University. "We're killing more people than we're saving with these procedures," says UT's Goodwin. "It's as simple as that."

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