

Consumer Reports Warns Against the Risks of Radiation Overexposure from Unnecessary CT Scans

Researchers Estimate at Least Two Percent of All Future Cancers in the U.S. Will Stem from CT Scans Alone – That’s Approximately 29,000 Cases and 15,000 Deaths Per Year

YONKERS, NY ([PRWEB](#)) January 27, 2015 -- X-rays have been used for almost 120 years and computed tomography, or CT scans, were introduced in the 1970’s. These newer scans allow doctors to see with unprecedented precision the inner workings of the human body through the use of multiple X-ray images. Their use has grown from fewer than 3 million per year in 1980 to more than 80 million today.

CT scans emit a powerful dose of radiation, in some cases equivalent to about 200 chest X-rays, or the amount most people would be exposed to from natural sources over seven years. A dose like this can alter the makeup of human tissue and create free radicals, molecules that can wreak havoc on human cells. Human bodies can often repair that damage – but not always. When they don’t, the damage can lead to cancer that can take from five to 60 years to develop, with risk that also depends on age and lifestyle.

Scientists have struggled to quantify the dangers of medical radiation and have often relied on evidence from the atomic bomb attacks in Hiroshima and Nagasaki. But growing research now shows that today’s medical patients are being harmed, too.

The full story, titled “Radiation Risks – Overexposed” is featured in the March 2015 issue of Consumer Reports magazine and is available at www.ConsumerReports.org. “No one says that you should avoid a CT scan or other imaging test if you really need it, and the risk posed by any single scan is very small,” says Marvin M. Lipman, M.D., Consumer Reports chief medical adviser. “But the effect of radiation is cumulative, and the more you’re exposed, the greater your cancer risk.” So it’s essential that consumers always ask doctors why they are ordering an imaging test and whether their health problem could be managed without one.

Doctors order millions of radiation-based imaging tests each year, but recent research shows that about one-third of these scans serve little if any medical purpose. Given the greater lifetime risk of cancer that comes with increased radiation, why is there so much overuse?

- **Uninformed physicians.** In a study of 67 doctors and medical providers caring for patients undergoing abdominal CT scans, fewer than half knew the scans could cause cancer. In another study, only 9 percent of 45 ER physicians said they knew CT scans increased cancer risk.
- **Misinformed patients.** Patients aren’t aware of the danger. A new Consumer Reports survey of 1,019 U.S. adults found that less than one in six patients are told by their doctors about the radiation risks of medical imaging. Also many patients had mistaken assumptions about the risks. For example almost as many (17 percent) U.S. adults were very concerned about magnetic resonance imaging (MRI), which doesn’t emit radiation, as were concerned about CT scans (19 percent) which do emit radiation.
- **Financial incentives.** Most doctors are paid by volume, so they have an incentive to order tests. And many doctors have invested in radiology equipment or clinics. Research shows such physicians order far more CT scans and other imaging tests.

- **Fear of lawsuits.** Almost 35 percent of imaging tests are ordered mainly as a defense against lawsuits, not because of true medical need, according to a study presented at the 2011 meeting of the American Academy of Orthopedic Surgeons.
- **Patient demand.** If you or your child is in pain it's normal to want an imaging test to find out the cause. But that's often not necessary or wise. Also, many back-pain sufferers, for example, ask their doctors for an X-ray or CT scan (and many doctors acquiesce) even though expert guidelines say such tests are only warranted if the pain lasts more than a month.
- **Lack of regulation.** About one-third of the people in the CR survey assumed that laws strictly limit how much radiation a person can be exposed to during a CT scan. In fact, unlike mammography, there are no federal radiation limits for any kind for CT imaging. There are also no national standards for the training or certification of technologists who operate the imaging machines. Some states allow almost anyone to work the equipment. Finally, it has been reported that about one-third of scanners currently in use will not meet the Centers for Medicare and Medicaid Services safety features standards that will commence in 2016.

Young people are particularly vulnerable to radiation. New evidence comes from a 2013 Australian study that looked at more than 680,000 people who had CT scans before the age of 20 and compared them with some 10 million people younger than 20 who did not have a CT scan. The researchers determined that for every 10,000 young people scanned, 45 would develop cancer over the next 10 years, compared with 39 cancers among 10,000 people not screened.

Overall, people scanned had a 24 percent increased cancer risk, and each additional scan boosted risk an additional 16 percent. Children who had one before the age of 5 faced a 35 percent spike in cancer risk. Other researchers estimate that for every 1,000 children who have an abdominal CT scan, one will develop cancer as a result, and a 2012 study that looked at almost 180,000 British children linked CT scans to higher rates of leukemia and brain cancer.

Consumer Reports offers the following advice on what consumers can do before getting any radiation-based imaging tests done:

- **Ask why the test is necessary.** Patients should never turn down a test if it's really needed – but they're often not. People should ask why the test is being done, how the result will be used, what will happen if they don't get the test, how much radiation they will be exposed to, and whether there is a radiation-free alternative like MRI or ultrasound that could be substituted.
- **Check credentials.** Consumers should ask whether the facility is accredited by the American College of Radiology, whether the CT technologists are credentialed by the American Registry of Radiologic Technologists, and whether the person interpreting the scans is a board-certified radiologist or a pediatric radiologist.
- **Get the right dose for your size.** The smaller or thinner someone is, the lower the radiation dose that's required. The circumference of the chest, hips, thigh, or waist can also change the dose – so check before you get scanned if the person taking the test has factored all of that into the scan.
- **Ask for the lowest effective dose.** The strength of the radiation dose used during a CT scan can vary tremendously, even when done in the same institution and for the same medical purpose. Avoiding the highest

of those doses could almost cut in half the number of future radiation-related cancers, according to a 2013 study in the journal JAMA Pediatrics.

- Avoid unnecessary repeat scans. The Institute of Medicine reports that \$8 billion is spent annually on repeat testing, much of it unnecessary. It often happens because doctors may prefer to get a new scan rather than look at previous ones. Consumers should let their doctor know if they had a recent imaging test. They should keep track of their scans, jot down the date, facility, and physician in a journal – and keep a copy on CD to show a new doctor.



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