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CT Scans in Children May Trigger 5,000 Cancers in U.S.

By Nicole Ostrow - Jun 10, 2013 4:00 PM ET

The radiation from 4 million annual computerized tomography scans in U.S. children younger than 15 may lead to almost 5,000 cancers each year in the future, a study found.

The use of [CT scans](#) of the head, abdomen or pelvis, chest or spine in children 14 years and younger more than doubled from 1996 to 2007 before beginning to decline through 2010, according to research released today by [JAMA Pediatrics](#). Those at greater risk for cancer were younger patients, girls, and those who underwent CT scans of the abdomen/pelvis or the spine rather than other areas of the body, the researchers said.

Today's study adds to previous research in adults that has shown a three-fold increase in the number of CT tests in the U.S. from 1996 to 2010. A 2009 study in JAMA Internal Medicine estimated that about 29,000 future cancers would occur in the U.S. because of CT scans done in 2007. More studies are needed to understand when a CT scan might benefit a patient and when it won't, said Rita Redberg, editor of JAMA Internal Medicine, who wrote an accompanying editorial.

"There's a lot more tendency to order imaging tests these days than we did 20 years ago for the same symptoms," [Redberg](#), a professor of medicine at the [University of California, San Francisco](#), said today in a telephone interview. "There's something in our culture at this point about ordering more tests, particularly high-tech tests. I don't think people think about the radiation."

More Procedures

About [7 million](#) CT tests are performed in children each year in the U.S. and the number is rising about 10 percent annually, according to the Image Gently Campaign and the Alliance for Radiation Safety in Pediatric Imaging, which is funded by the Society for Pediatric Radiology, the American College of Radiology and other organizations to push for lower radiation doses in children.

Researchers in the study used data from seven U.S. health-care systems to look at CT scan use in children. They also calculated the [radiation exposure](#) and projected the future cancer risk to those patients.

The use of CT scans in children younger than 5 years old almost doubled to 20 scans per 1,000 children in 2005-2007 from 1996, before declining to 15.8 scans per 1,000 in 2010. The research showed that for children ages 5 to 14, the use of CT tests almost tripled to 27 scans per 1,000 children in 2005-2007 from 1996, before dropping to 23.9 scans per 1,000 in 2010.

Cancer Estimate

The researchers estimated that 4,870 future cancers may occur each year in the future from the 4 million annual pediatric CT scans of the head, abdomen/pelvis, chest or spine.

The findings also suggest that reducing the highest doses of radiation from CT scans to the middle dose may prevent 43 percent of these cancers.

Parents should question whether CT scans are necessary and if they are, whether doctors will use the lowest radiation dose possible to get the images they need, said [Diana Miglioretti](#), the study's lead author, a professor of biostatistics at the University of [California](#), Davis, and a senior investigator at Group Health Research Institute in [Seattle](#).

Currently, she said, it's impossible to tell if a cancer someone gets is related to radiation from CT tests earlier in life. She said she is seeking funding to follow the children in the study to see whether they get cancer.

To contact the reporter on this story: Nicole Ostrow in [New York](#) at nostrow1@bloomberg.net