

# Cancer risks increase with complex heart tests

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Complex heart imaging can increase cancer risks for children throughout their lifetime, according to a new study co-authored by Le Bonheur Cardiologist Jason Johnson, MD, MHS. The study, which appears in the June 9, 2014 issue of the American Heart Association's journal *Circulation*, is the first in which researchers quantified cumulative radiation doses in pediatric heart patients and predicted lifetime cancer risks based on the types of exposures.

In the study, Johnson and fellow researchers found that radiation from standard X-rays don't significantly raise cancer risks for young children, in general, but children undergoing more complex procedures with higher radiation – like cardiac catheterizations and computed tomography (CT) scans have higher risks.

"Cancer risk overall is relatively low, but we hope that this awareness will encourage providers to limit [radiation exposure](#) in children, when alternative procedures can offer the same benefit with less radiation," Johnson said.

Researchers reviewed medical records to find the most common imaging procedures, calculated how much radiation organs absorb during each procedure, then used a National Academy of Sciences report to analyze lifetime cancer risks based on the amounts of each procedure's exposure. Lifetime [cancer risk](#) increases ranged from 0.002 percent for chest X-rays to 0.4 percent for complex CT scans and cardiac catheterizations.

Johnson is an assistant professor at the University of Tennessee Health Science Center and specializes in [congenital heart disease](#) and advanced cardiovascular imaging. He helped complete the research at Duke University Medical Center, where he completed his pediatric cardiology and advance imaging fellowships.

**More information:** [circ.ahajournals.org/content/eLATIONAHA.113.005425](http://circ.ahajournals.org/content/eLATIONAHA.113.005425)

Provided by Le Bonheur Children's Hospital

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