

Researchers successfully lower radiation dose associated with pediatric chest CT scans

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Adjusting the radiation dose based upon a child's weight can significantly lower the radiation dose associated with pediatric chest computed tomography (CT) scans, according to a study published in the May issue of the *American Journal of Roentgenology*. CT scanning combines special X-ray equipment with sophisticated computers to produce multiple images or pictures of the inside of the body.

The study, performed at Lucile Packard Children's Hospital, Stanford School of Medicine, in Stanford, CA, included 120 [children](#) who underwent chest CT scans — 60 children weighed less than 15 kg (33 pounds) and 60 weighed between 15 and 16 kg (33 - 132 pounds). Radiologists adjusted their chest CT protocols by lowering the radiation dose according to patient weight.

"For children weighing less than 33 pounds, we were able to reduce the radiation dose by approximately 73 percent," said Beverley Newman, MD, lead author of the study. "For children weighing between 33 and 132 pounds, we were able to reduce the radiation dose by approximately 48 percent," said Newman.

"CT examinations are commonly performed in the pediatric population. However radiation dose related to CT has become a public health concern, and appropriate reduction of radiation dose has become an important goal in pediatric CT," she said.

"While it is important to keep radiation doses as low as possible, it is

important not to compromise the diagnostic usefulness of the scan. In our study, lowering the [radiation dose](#) did increase image noise resulting in grainy images. However the low dose examinations were still considered diagnostically acceptable," said Newman.

"As our study suggests, significant dose reduction can be achieved for routine pediatric chest CT by paying attention to simple protocol adjustments based upon patient weight," she said.

More information: www.ajronline.org

Provided by American College of Radiology

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