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Experts offer pointers for optimizing radiation dose in chest CT

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An article in the September issue of the *Journal of the American College of Radiology* summarizes methods for radiation dose optimization in chest computed tomography (CT) scans. Chest CT is the third most commonly performed CT examination, frequently used to diagnose the cause of clinical signs or symptoms of the chest, such as cough, shortness of breath, chest pain or fever.

Regardless of the body region being scanned, dose reduction must always start with making sure that there is a justifiable clinical indication for CT scanning.

"Use of the appropriate radiation dose for chest CT is especially important because of direct radiation exposure of breasts, lungs and other organs, such as the thyroid, which represent some of the most radiosensitive organs in the human body," said Mahadevappa Mahesh, MS, PhD, author of the article.

Investigators from Massachusetts General Hospital, Harvard Medical School, in Boston, MA, and Johns Hopkins University in Baltimore, MD, reviewed practical strategies for reducing radiation dose associated with chest CT examinations.

"Radiation dose reduction for chest CT requires tweaking of scanning protocols and techniques on the basis of patient age, size, clinical indications and follow-up imaging," said Mahesh.

Other specific strategies for dose reduction on chest CT involve the stratification of CT protocols on the basis of clinical indications, which determines the required image quality for assessing specific abnormalities in question.

"Pediatric chest CT should always be performed at lower radiation doses compared with chest CT in adult patients," said Mahesh.

Investigators also emphasize that limiting scan length using appropriate scan parameters such as lower tube current, automatic exposure control and lowering tube voltage for thin patients, are key to reducing radiation dose for chest CT examinations in children and adults.

More information: www.jacr.org/

Provided by American College of Radiology

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