

Radiologists find a technique to significantly reduce patient radiation dose during CT angiography

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Radiologists have discovered that prospective electrocardiogram (ECG) gating allows them to significantly reduce the patient radiation dose delivered during computed tomography (CT) angiography, a common noninvasive technique used to evaluate vascular disease, according to a study published in the October issue of the *American Journal of Roentgenology (AJR)*.

The study, performed at the Medical College of Wisconsin, compared the use of retrospective ECG gating (when the radiation beam is on constantly) and prospective ECG gating (when the [radiation beam](#) is turned on only intermittently) during CT angiography.

Forty patients were evaluated using retrospective gating and 40 more were evaluated using prospective gating. "In comparison, image quality was equivalent," said W. Dennis Foley, MD, lead author of the study. "In regards to radiation dose, the dose was three times higher with retrospective gating," he said. The radiation dose using prospective gating was approximately 14 mSv compared to 43.3 mSv using retrospective gating.

"[Radiation exposure](#) continues to be a concern during CT procedures. However our study is significant because it shows radiologists are able to significantly decrease the radiation dose delivered to the patient during CT angiography," said Dr. Foley.

"Prospective ECG-gated [CT angiography](#) is a technically robust, noninvasive imaging technique for the evaluation of vascular disease. It is safer than conventional angiography and the patient benefits from having it done intravenously rather than through the arteries," he said.

Source: American Roentgen Ray Society

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