

# Image filters improve image quality and lower patient radiation dose associated with CT scans

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Adaptive image filters can lower the patient radiation associated with chest and abdominal computed tomography (CT) scans while significantly improving image quality, according to a study to be presented at the ARRS 2010 Annual Meeting in San Diego, CA.

Image filters are one of the tools used in [image processing](#) to lower image "noise" in low [radiation dose](#) CT. "As we lower the radiation dose, the CT images become "noisy" or speckled which makes it difficult to view the organs or the body structures in the image," said Sarabjeet Singh, MD, lead author of the study. "Image filters allow us to effectively lower the radiation dose without sacrificing the image clarity," said Singh.

The study, performed at Massachusetts General Hospital in Boston, MA, included 12 patients who received a [CT scan](#) at four different levels of radiation dose in the chest and abdomen. All low dose images were processed with adaptive filters, and "regardless of radiation dose, post processing with image filters improved subjective noise for both chest and abdominal CT and helped lower the CT radiation dose levels for chest by up to 40 mAs and for the abdominal CT by up to 100 mAs," said Singh.

"With the increasing use of CT, radiation dose concerns have been rising in the medical community, patients, as well as the media. Hence various

efforts have been made to lower the radiation dose associated with CT scanning," he said.

"There are many ways to lower patient radiation dose associated with CT scans. However, the filters are one of the simpler ways of reducing radiation dose with CT. They only require a selection of preset settings that can be applied automatically to improve image quality and thus enable lowering of the radiation dose," said Singh.

Provided by American College of Radiology

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