

Bypassing contrast in patients with kidney disease and contrast allergies may lead to less accurate scans

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Upon an arrival to the emergency department for abdominal pain of unknown cause, most non-pregnant adult patients receive a CT scan with IV contrast to diagnose the source of the pain.

However, IV [contrast](#) can be a risk in [patients](#) with severe kidney disease or at risk for an allergic reaction from the dye. When scans are performed without IV contrast, though, they are usually less accurate, which can lead to misdiagnosis.

And recent research from the University of Michigan now confirms this: a study found choosing to withhold IV contrast from certain types of abdominal CT scans can decrease the accuracy of the scan by about 30%.

"The decrease in accuracy means there is a higher chance of misdiagnosis," said Matthew Davenport, M.D., senior and corresponding author. "Non-contrast scanning can lead to confusion about what the source of the [pain](#) is, resulting in a misdiagnosis or missing the problem entirely."

Contrast is used in these general abdominal scans to create an image contrast between the normal and abnormal parts of the body. Clear distinction of abnormalities in the body gives emergency department doctors the most accurate real-time answers to make a quick diagnosis.

The results of the study provide a much clearer understanding of the risk-benefit tradeoffs involved in patients with borderline kidney function or a questionable contrast allergy. We now know that the diagnostic penalty of withholding IV contrast is large, and this needs to be considered when attempting to avoid the risks of giving IV contrast.

"Our goal is to maximize benefit and avoid harm," said Davenport, a clinical professor of diagnostic radiology and urology. "We now have a clearer understanding of how to do that in patients undergoing CT scanning in the [emergency department](#) for [abdominal pain](#)."

The findings are published in the journal *JAMA Surgery*.

More information: Hiram Shaish et al, Diagnostic Accuracy of Unenhanced Computed Tomography for Evaluation of Acute Abdominal Pain in the Emergency Department, *JAMA Surgery* (2023). [DOI: 10.1001/jamasurg.2023.1112](https://doi.org/10.1001/jamasurg.2023.1112)

Provided by University of Michigan

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