

## Do we need to order a CT for every patient with renal colic?

**Bottom Line Up Top:** In selective patients presenting with flank pain, we can diagnose renal colic without a CT scan. There is also a subset of patients that would benefit from IV contrast enhanced CT scanning.

**Clinical Scenario:** A 35-year-old man with no PMH presents with left flank pain, hematuria and history of kidney stones. His vitals are: HR 90, BP 150/90, Temp 98, O2 Sat 99% on RA, RR 18. His labs are unremarkable, his UA is positive for large blood without signs of infection and his pain is much improved after one dose of IV ketorolac. You plan on discharging him but are considering a CT to objectively identify the kidney stone.

**What Your Gut Says:** We need a CT report to diagnose a kidney stone.

**What The Evidence Says:** Many clinicians feel that CT imaging is required to diagnose a patient with renal colic. There are greater than 2 million annual emergency department visits for suspected renal colic in the US, and Ct scanning is performed for more than 90% of patients who receive a diagnosis of kidney stone. ([Chang 2021](#))

[This systematic review](#) was used as the basis for a 9 member panel to develop consensus guidelines on CT imaging for patients with suspected renal colic in 29 scenarios. The panel included physicians from Emergency Medicine, Urology and Radiology and was published in major journals of all three specialities. They conclude in young patients with no concern for alternative diagnosis, renal colic can be managed without CT imaging or just POCUS. In undifferentiated flank pain, POCUS should guide imaging. For example if there is a young male or female patient with a classic story of renal colic supported by hematuria it may be appropriate to do no imaging. Similarly, a young person with a recurrent renal colic may not need additional imaging. The one caveat is that If the pain is unmanageable and there is a concern for a significant obstruction, CT imaging may be indicated to help characterize the stone.

In older patients, there are many reasons to lead with a CT for imaging. In cases of undifferentiated flank pain there are many urgent catastrophic diagnoses that need to be ruled out (ie. AAA, Aortic dissection, mesenteric ischemia). In younger patients, these diagnoses are quite rare and especially so in a stable patient so one would be a minimal benefit in CT scan use. When you are using CT imaging, a CT with IV contrast is preferred.

Research from our very own [SIUH department of radiology](#) recommended that contrast-enhanced CT scans can safely exclude obstructive urolithiasis just as well as noncontrast CTs. In older patients with no history of kidney stones, CT imaging with IV contrast is preferable. If AAA is high on the differential, POCUS would be the best initial test.

**Bottom Line:** In older patients with flank pain whom you have a concern for alternative diagnoses, obtain a contrast-enhanced CT. In a young patient who has a clear clinical

diagnosis, there is no required imaging. POCUS can help guide imaging decisions. **The practice of getting a CT scan in every renal colic patient at every visit should be ended.**

## Read More

**First10EM:** [Imaging for Renal Colic](#)

**SGEM:** [SGEM XTRA: COME TOGETHER, RIGHT NOW – OVER RENAL COLIC](#)

## References

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