

Acute Pyelonephritis

An infection involving the kidney is known as acute pyelonephritis. This usually starts as a urinary tract infection that moves to the kidney. Acute pyelonephritis is commonly treated with antibiotics. Imaging studies are not usually required but may be needed if an individual has a history of diabetes or kidney stones (<https://www.radiologyinfo.org/en/info/stones-renal>), is immunocompromised, or is not responding to treatment.

A CT of the abdomen and pelvis (<https://www.radiologyinfo.org/en/info/abdominct>) with or without intravenous (IV) contrast is usually the most appropriate test for adults. An MRI (<https://www.radiologyinfo.org/en/info/mri-abdomen-pelvis>) with or without IV contrast of the abdomen and pelvis is also appropriate. One disadvantage of MRI compared with CT is that MRI does not find smaller stones. Use of IV contrast may provide important information about the kidney function. If a patient cannot tolerate contrast, diffusion-weighted imaging on MR can be used as an alternative, for example, in people with kidney function problems and pregnant or lactating women.

Ultrasound of the kidneys and bladder (<https://www.radiologyinfo.org/en/info/abdominus>) is sometimes appropriate. It can be done at the bedside and does not require use of contrast material. Color and power Doppler should be included to improve the sensitivity but may still miss problems with the kidneys.

Renal scintigraphy (<https://www.radiologyinfo.org/en/info/renal>) is a test that uses a camera and radioactive tracer (Tc-99m) to look at how the kidneys work. It is sometimes appropriate for evaluating children with pyelonephritis. It may also help find reflux and birth defects that could cause repeated infections, scarring, and loss of kidney function.

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