

CT Scan

Computed axial tomography, also known as CAT scan or CT scan, is an imaging technique that is a widely regarded tool for evaluating the genitourinary tract.

CT scanning combines X-rays and computer calculations to produce precisely detailed cross-sectional slices of images of the body's tissues and organs. More specifically, very small, controlled beams of X-rays, rotating in a continuous 360-degree motion around the patient, pass through the tissue as an array of detectors measure thousands of X-ray images or profiles. Computer calculations based on those multiple measures produce the detailed pictures reflected on a screen. These images can be stored, viewed on a monitor or printed on film. In addition, stacking the "slices" of images can also create three-dimensional images of the body's internal structures.

Since CT scans can distinguish between solid and liquid, it is extremely valuable in examining the type and extent of kidney tumors or other masses, such as stones or cysts, distorting the urinary tract. CT technology, however, is also enhanced by other factors. Intravenous injections of contrast agent (dye) intensify the images. CT scans have improved speed and accuracy by gathering volumes of continuous kidney and urinary data in seconds with no gaps between images.

Specialized applications of CT can be performed in specific clinical circumstances. For example, three-dimensional reconstructions of the kidney and blood supply may show vascular abnormalities and provide "road maps" for planning surgeries.

The test is performed in a radiology department by a technician, under the supervision of a radiologist. The patient will be asked to lie in a certain position on a narrow table that slides into the center of the scanner. Dye may also be administered into a vein in the hand or arm. The technician will issue instructions to the patient regarding body position and breathing during this test. Upon test completion, the patient can resume their normal daily activities.

CT scanning is a safe, efficient and effective technology that produces minimal risks. The major risk involves a reaction to any iodine-based dye that may be used. Minor reactions to the dye may include hot flashes, nausea and vomiting, which are usually treated successfully with antihistamines. In very rare circumstances, more severe complications—breathing difficulties, low blood pressure, swelling of the mouth or throat and even cardiac arrest— can occur.

There is relatively low radiation exposure during this test. However, a patient who is or may be pregnant should notify their physician prior to this examination, as a fetus is susceptible to the risks associated with radiation.
