

CT SCAN

What is a CT scan?

A CT (computed tomography) is a study that uses a series of X-Rays to create image "slices" of the body. This type of study is commonly called a CAT scan. The "A" in CAT refers to "axial," or computed axial tomography. Axial is an orientation of images, but with other orientations available, the study is referred to as a CT scan.

In the CT scan, the patient is on a table that has a doughnut shaped device at one end. This device contains an X-ray that takes images of the body from different orientations. A computer integrates these images to create a two-dimensional image of the body. The images represent slices of the body, and are usually completed in a series with about one slice per centimeter.

CT scans of internal organs, bone, soft tissue and blood vessels provide greater clarity than conventional x-ray exams.

Common uses

CT scanning of the head is typically used to detect:

- bleeding, brain injury and skull fractures in patients with head injuries.
- bleeding caused by a ruptured or leaking aneurysm in a patient with a sudden severe headache.
- a blood clot or bleeding within the brain shortly after a patient exhibits symptoms of a stroke.
- a stroke, especially with a new technique called Perfusion CT.
- brain tumors.
- enlarged brain cavities (ventricles)
- diseases or malformations of the skull.

Safety

CT examinations improve health care and are an essential part of diagnosis and treatment planning. However, there are some risks associated with the level of radiation exposure during a CT. Women should always inform their physician and x-ray or CT technologist if there is any possibility that they are pregnant. The risk of serious allergic reaction to contrast materials that contain iodine is extremely rare, and radiology departments are well-equipped to deal with them.

Because children are more sensitive to radiation, they should have a CT exam only if it is essential for making a diagnosis and should not have repeated CT exams unless necessary. CT scans in children should always be done with low-dose technique.

What should I expect BEFORE my CT scan?

Medications

It is important for you to keep to your regular medication schedule, however, please check with your physician or CT department at the facility where your exam is scheduled prior to your appointment. If you have a known allergy to contrast material, or "dye," your doctor may prescribe medications (usually a steroid) to reduce the risk of an allergic reaction. These medications generally need to be taken 12 hours prior to administration of contrast material. To avoid unnecessary delays, contact your doctor before the exact time of your exam.

Food and drink

Unless you are told specifically by staff or your physician, you should not eat or drink for six to eight hours prior to your test. If you are not on an NPO status, then we encourage you to drink plenty of clear fluids before your exam.

When to arrive

If you are having a CT scan of your abdomen or pelvis, you need to arrive one hour before your scheduled appointment. This is to allow time for you to drink oral contrast material before your exam and to ensure that the contrast material completely coats your gastrointestinal tract. The contrast material helps to highlight body areas for the CT scan. If you are having a scan other than the abdomen you should arrive 10 mins prior to your appointed time.

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What to wear

Wear comfortable clothing, preferably clothes with no zipper or buttons, such as a sweats. You may also be asked to remove jewelry, eyeglasses and any metal objects or clothing that might interfere with the images. Gowns are available if needed.

Diabetic conditions

If you are an insulin-dependent diabetic, please continue to take your insulin as prescribed, but drink extra fruit juices to make up for the fasting of solid foods for the 2–3-hour period that your stomach is empty. Patients who are taking diabetic medications, such as Glucophage (Metformin) should take the prescribed dose as normally done on that day but discontinue the next doses for 48 hours AFTER their CT exam. Patients should notify their Primary Care Physician (PCP) that they were instructed to discontinue their medication for 48 hours. If you need a substitute medication, please consult your doctor.

Intravenous preparation

Many patients receive a contrast agent intravenously (IV) during their CT test. If your doctor or the radiologist has determined that this procedure will enhance your CT scan results, the technologist will place an IV in your arm or hand prior to going into the test.

Pacemakers

You should inform the technologist if you have a pacemaker. Pacemakers do not hinder the use of CT as in MRI if the scanner will not be taking images repeatedly over the area of the pacemaker device in the upper chest. This is usually not an issue for cardiac CT exams.

What will I experience DURING my CT scan?

Scanning

The technologist will help position you on an exam table. The table may have straps, pillows, or a special cradle for your head to hold you in place. You will probably lie on your back, although you may be asked to lie on your side or your stomach, depending on which part of your body is being scanned, especially if you are undergoing a biopsy. If the scan is done as part of radiation therapy treatment planning, there may be special devices such as masks or body casts to keep your body in the same position that will be used for the radiation treatment.

During the scan, the technologist who monitors the procedure will be in an adjoining control room. However, he or she will be able to observe you through a window and you will be able to communicate through an intercom system.

The CT scanner resembles a large donut. The exam table will slide back and forth through the large hole in the center of the machine as the scanner rotates around you. At first, the table will move through the scanner quickly, which helps the technologist confirm that your body is in the right position. After that, the table will move more slowly.

CT scans are not painful. However, you will need to lie still for the entire scan, which may become uncomfortable. Since the scanner is shaped like a donut, you will not be enclosed in the scanner at any time. You can also expect to hear whirring or clicking sounds from the machine.

You may be asked to hold your breath during part of the scan because the motion created by breathing can blur the images. The exam table may be raised, lowered, or tilted to create the correct angle for the x-rays.

Length of scan

Each CT scan is individualized and tailored to each patient's needs. In general, the actual image-taking is only a few mins and most examinations last approximately 15 minutes in total.

Contrast medium

Depending on which part of your body is being scanned, you may be given a contrast medium. This dye may be given orally (as a drink), through an intravenous (IV) line, or through an injection (shot). Then it will travel through your bloodstream and help create a clearer picture of specific parts of your body.

Contrast mediums, or contrast agents, highlight your organs and blood vessels and help the radiologist see them better. In the past, most contrast agents contained higher levels of iodine. The new contrast

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agents available today have lower iodine content, which greatly reduces the chance of an allergic reaction and most of the discomforts associated with the injection.

What should I expect AFTER my CT Scan?

You have no restrictions after having a CT scan and can go about your normal activities. To help eliminate the contrast medium from your body, drink plenty of decaffeinated or non-alcoholic beverages. Water and juices also work well. The kidneys help filter the iodine that is in the contrast out of the body. If you have kidney disease or diabetes, you should be closely monitored for kidney problems after this test. If you have diabetes or have kidney disease, talk to your health care provider before the test about your risks.

CT Scan Results

We understand that quick results are important for our patients. Exams are typically read within 24 hours and results will be sent to your physician who will go over them with you.