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[Computed Tomography \(CT\) Scan](#) [1]

This section has been reviewed and approved by the [Cancer.Net Editorial Board](#) [2], 11/2015



Listen to the [Cancer.Net Podcast: CT Scan - What to Expect](#) [3], adapted from this content.

Doctors use a computed tomography (CT) scan, also called a CAT scan, to find cancer. They also use it to learn more about cancer after they find it. They can use it to:

- Learn the cancer's [stage](#) [4]. Stage is a way to describe where the cancer is, if it has spread, and if it is changing how your organs work. Knowing this helps you and your doctor choose the best treatment. It also helps doctors predict your chance of recovery.
- Find the right place for a [biopsy](#) [5].
- Plan [radiation therapy](#) [6].
- Evaluate how well treatment is working during follow-up visits.

How does a CT scan work?

A CT scan uses an x-ray machine to create a three-dimensional picture of the inside of the body. A computer then combines these images into a detailed view that shows any abnormalities or

tumors. Sometimes, the doctor will inject a special dye called a contrast medium into a patient's vein to create more detail in the images. At other times, a patient may be asked to swallow a liquid contrast material. Areas that are commonly scanned include the head, neck, chest, abdomen, pelvis, or limbs.

One risk of this test is radiation exposure, especially for children. However, the potential benefits of having a CT scan usually outweigh these risks. If you are receiving multiple CT scans and x-rays, talk with your doctor about using another type of test that involves less exposure to radiation.

An integrated PET-CT scan

Your doctor might recommend an "integrated PET-CT scan." This combines images from a PET scan and a CT scan. The machine does both scans at once. Your doctor learns more from the two scans together than from either test alone. Learn more about [what to expect with an integrated PET-CT scan](#) [7].

Who does my CT scan?

A CT scan is performed at the radiology or radiation oncology department of a hospital or at an outpatient imaging center. It is performed by a radiologic technologist and interpreted by a radiologist.

Getting ready for a CT scan

When you schedule your CT scan, you will get detailed instructions about how to prepare. You may be told to drink nothing but clear liquids starting at midnight the night before your appointment and not to eat or drink anything for at least four hours before your scan begins. However, talk with your health care team about restrictions on eating and drinking because they may not be necessary for scans of some parts of the body.

You also should tell your doctor or nurse about all the medications you are taking and ask whether you should take them on the day of the test. In addition, discuss any drug allergies you have, especially any allergic reactions to iodine you may have experienced in the past. If you have diabetes, make sure to discuss this with your doctor as well.

Women should tell their doctors if they are breastfeeding or if there is any chance they are pregnant because a CT scan could put the baby at risk. Also be sure to mention any other medical conditions you may have.

You will be asked to sign a consent form stating you understand the benefits and risks of the CT scan and agree to the test. Talk with your doctor or nurse about any concerns you have about the CT scan. You may also want to ask whether you can bring your own music to the scan because some facilities allow patients to listen to music during their scans.

Finally, check your insurance plan to see if it covers the CT scan and whether you will have any out-of-pocket costs.

During the procedure

When you arrive for your CT scan, you may need to change into a hospital gown or remove clothing or jewelry that could affect the scan. This includes belts, earrings, shirts with snaps or zippers, bras, and glasses.

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

If you are given an injection, you may feel heat or itching at the injection site or have a metallic taste in your mouth. But both sensations should disappear after a few minutes. If you experience a more serious reaction, like trouble breathing, tell the technologist immediately.

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, but the technologist may ask you to lie on your side or your stomach, depending on which part of your body is being scanned. 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 for the treatment.

During the scan, the technologist will be in a nearby control room. He or she will be able to observe you through a window or a video camera, and you will be able to communicate through an intercom system.

The CT scanner looks like 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. This 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; some machines are noisier than others.

The technologist may ask you to hold your breath during part of the scan because the motion created by breathing can blur the images. He or she may raise, lower, or tilt the exam table to create the correct angle for the x-rays. Ask him or her to tell you when the table will move.

The exam will typically last up to one hour. But the scanning itself takes only 10 to 15 minutes or less. Newer scanners, including spiral or helical CT scanners, are even faster. If a larger part of your body is being scanned, the test may last longer. The technologist should be able to give

you a time estimate before you begin.

When the scan is finished, you may be asked to remain on the exam table while a radiologist reviews the images to determine whether more images are needed.

After the procedure

You can return to your normal activities immediately after your CT scan, including driving. If you received a contrast medium for the scan, you may be told to drink a lot of water to flush it out of your body.

Questions to ask your doctor

Before having a CT scan, consider asking your doctor the following questions:

- What will happen during the CT scan?
- Who will perform the CT scan?
- How long will the procedure take?
- Will there be any discomfort?
- What are the risks and benefits of having a CT scan?
- Do I need to bring any of my other radiologic images—such as an earlier magnetic resonance imaging (MRI) test—to my appointment?
- Is the imaging facility accredited to perform CT scans?
- Will I be given a contrast medium before the scan? If so, how will this be given to me?
- May I eat or drink anything prior to the exam?
- Does the facility have an emergency response plan in case I have an allergic reaction to the dye used for the scan?

- Will I need to avoid any activities after the CT scan?
- When will I learn the results?
- How will the results be communicated to me?
- Will I need any additional tests?

More Information

[Tests and Procedures](#) [8]

Additional Resources

RadiologyInfo.org: [CT - Body](#) [9]

National Cancer Institute: [Computed Tomography Scans and Cancer](#) [10]

Links

- [1] <http://www.cancer.net/navigating-cancer-care/diagnosing-cancer/tests-and-procedures/computed-tomography-ct-scans>
- [2] <http://www.cancer.net/about-us>
- [3] <http://www.cancer.net/node/22943>
- [4] <http://www.cancer.net/node/25070>
- [5] <http://www.cancer.net/node/24406>
- [6] <http://www.cancer.net/node/30687>
- [7] <http://www.cancer.net/node/24565>
- [8] <http://www.cancer.net/node/24959>
- [9] <http://www.radiologyinfo.org/en/info.cfm?pg=bodyct>
- [10] <http://www.cancer.gov/about-cancer/diagnosis-staging/ct-scans-fact-sheet>