Memorial Sloan Kettering Cancer Center

PATIENT & CAREGIVER EDUCATION

Computed Tomography (CT) Scan

This information will help you get ready for your computed tomography (CT) scan at MSK.

About your CT scan

CT scans take a fast series of X-ray pictures. The X-ray pictures are put together to create images of the area that was scanned. These images help your healthcare provider learn more about your tissues, bones, and blood vessels.

Things you may get the day of your CT scan

Contrast

You may need to get contrast the day of your CT scan. Contrast is a special dye that helps the radiologist see your blood vessels better in the images from the scan.

There are 2 different ways to get contrast:

- Intravenous (IV) contrast goes into your veins. This can be an IV in your arm, or a central venous catheter (CVC), such as an implanted port.
- Oral contrast is contrast you take by mouth.

Contrast will leave your body through your urine (pee) within 24 hours (1 day).

IV contrast

If you're getting IV contrast, you'll get it through a catheter (thin, flexible tube) in your vein. If you have a central venous catheter (CVC), your nurse will use it to give you contrast if they can. Not everyone can get contrast through their CVC.

Examples of CVCs include:

- An implanted port (sometimes called a mediport or port-a-cath).
- A tunneled chest catheter (sometimes called a Hickman™ catheter).
- A peripherally inserted central catheter (PICC) line.

If you don't have a CVC or can't get contrast through your CVC, you'll get contrast through an IV line. Your nurse will place the IV line in one of your veins, usually in your arm or hand.

Reactions to IV contrast

Side effects of IV contrast may include:

- Feeling dizzy.
- Feeling warm.

- Changes in taste.

Some people can have an allergic reaction to IV contrast. Tell your healthcare provider if you have had a reaction to contrast before. They may give you medicine to lower your risk of having another allergic reaction. If you do, they'll give you a resource called *Preventing An Allergic Reaction to Contrast Dye* (www.mskcc.org/pe/allergic-reaction-contrast).

Most allergic reactions to contrast are mild, such as hives. Some people can have very rare but more serious reactions, such as anaphylaxis (A-nuh-fih-LAK-sis). This is a very bad allergic reaction that can cause hypotension (a sudden drop in blood pressure) or trouble breathing. Anaphylaxis is treated with an epinephrine (eh-pih-NEH-frin) autoinjector, commonly known as an EpiPen®. This is an injection (shot) of epinephrine (adrenaline) into a muscle.

Oral contrast

If you're getting oral contrast, you will start drinking it before your scan.

You'll get one of the following oral contrast solutions:

- Iodinated contrast (contrast with iodine). This is different from contrast you get during MRI exams.

- Diluted barium sweetened with saccharin.

Both types of contrast work the same way and are used for the same purpose. Both are safe if you have diabetes or kidney disease.

You'll need to start drinking the oral contrast 30 minutes before your CT scan. This will give the contrast solution time to move through your body.

Reactions to oral contrast

Side effects of oral contrast may include:

- Diarrhea (loose or watery bowel movements) if you got iodinated contrast.
- Constipation (having fewer bowel movements than usual) if you got barium contrast).
- Feeling warm.
- Having a metallic taste in your mouth.
- Upset stomach or vomiting (throwing up).
- Headaches.

Breastfeeding after getting contrast

Your healthcare provider will ask you if you're pregnant or think you may be pregnant. If you are pregnant, your doctor may choose not to give you contrast. If you think you may be pregnant, we will do a urine pregnancy test

before your CT with contrast.

It's safe to continue breastfeeding after getting contrast. A very small amount of contrast will end up in your breastmilk if you are breastfeeding. This may change the taste of breastmilk slightly for a short time. You may choose to continue after your CT scan with contrast. If you have any concerns, you can choose not to breastfeed for 12 to 24 hours after your scan.

If you have questions about contrast and breastfeeding, talk with your radiologist on the day of your CT scan.

IV hydration

IV hydration is when fluids are put into your bloodstream through your CVC or an IV line. You may need IV hydration if you have poor kidney function (your kidneys don't work as well as they should). You will get the IV hydration before your CT scan, after your CT scan, or both. Your care team will arrange this for you.

What to do the day of your CT scan

You can eat and drink as usual on the day of your CT scan.

Take devices off your skin

You may wear certain devices on your skin. Before your procedure, surgery, or scan, some device makers

recommend you take off your:

- Continuous glucose monitor (CGM)
- Insulin pump

Talk with your healthcare provider about scheduling your appointment closer to the date you need to change your device. Make sure to bring an extra device with you to put on after your procedure, surgery, or scan.

You may not be sure how to manage your glucose (blood sugar) while your device is off. If so, before your appointment, talk with the healthcare provider who manages your diabetes care.

Remove jewelry

Jewelry can make the images from your scan harder to read. Certain metals can also heat up and cause burns during your scan. Tell a member of your care team if you cannot remove your jewelry before the day of your scan.

What to expect when you arrive

Many staff members will ask you to say and spell your name and birth date. This is for your safety. People with the same or similar names may be having a procedure on the same day. Once you're in the department, you'll fill out a brief questionnaire.

You may need to change into a gown before your CT scan.



For parents and guardians: If wearing a hospital gown raises your child's anxiety, call 212-639-8200 before your appointment to talk about other options.

If you're getting oral contrast, you will start drinking it before your scan.

If you're getting IV contrast, a member of your care team will ask:

- Do you have kidney disease?
- Do you have poor kidney function?
- Have you had surgery on your kidneys?
- Do you have diabetes?
- Are you taking metformin or medicine that has metformin, such as Glucophage®, Glumetza®, or Janumet®?

If you answer yes to any of these, your care team will review the lab tests showing how well your kidneys work before your CT scan.

Your nurse will place an IV catheter into your vein. They will use a vein in your arm or hand if you don't already have a CVC. You will get your contrast through your IV or CVC.

Inside the CT scan room

When it's time for your scan, your technologist will bring you to the scanning room. They will help you onto the scanning table. The machine looks like a large doughnut with a hole in the middle (see Figure 1). This is the scanning ring (scanner). The scanner is about 3 feet (1 meter) deep.

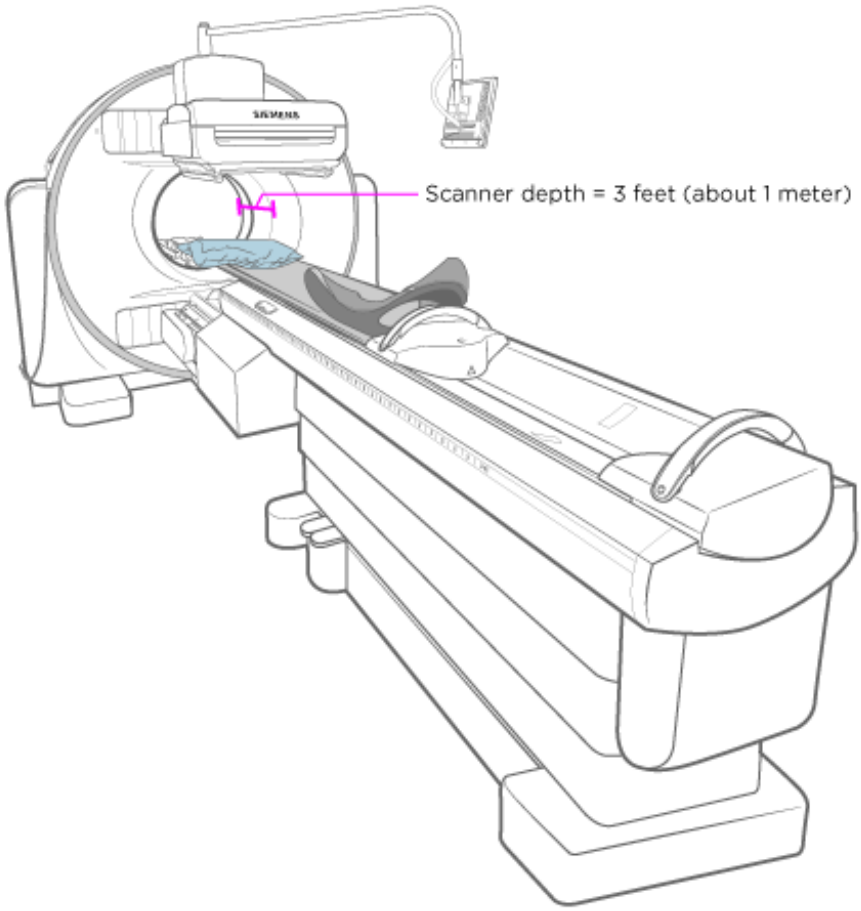


Figure 1. PET-CT machine

It's not a long tube like an MRI machine. Once you're on the scanning table, the table will move slowly through the scanning ring. You must lie very still in the scanning ring

until your scan is done.

After your technologist takes the first series of pictures, you'll get an injection of contrast in your IV or CVC. You may feel warm and have a mild metallic taste in your mouth.

Tell your nurse if you have any of these symptoms:

- Pain at your IV site.
- Itchiness.
- Swelling.
- Dizziness.
- Trouble breathing.
- Feeling like you're going to faint.

Your CT scan will take less than 30 minutes. Most CT scans take less than 10 minutes.

What to do after your CT scan

In the hospital

If your nurse placed an IV, they will remove it after your scan. They will place a bandage over the area. You can take off the bandage after 1 hour, as long you aren't bleeding.

If you're not feeling well, or if you have any questions or concerns, talk with your doctor or technologist.

Tell your nurse if you have any of the following symptoms:

- Itchiness.
- Hives.
- Dizziness.
- Trouble breathing.
- Feel weak or like you're going to faint.
- Swelling or discomfort in the area where your IV was placed.

At home

Drink plenty of liquids, especially water, for 24 hours after your CT scan. This will help the contrast leave your body.

Contact information

If you have any questions or concerns, call your healthcare provider. You can reach a staff member Monday through Friday from 9 a.m. to 5 p.m. After 5 p.m., during the weekend, and on holidays, leave a message or talk with another MSK provider. There is always another doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 646-982-1051 for help.

If you have questions or concerns, contact your healthcare provider. A member of your care team will answer Monday through Friday from 9 a.m. to 5 p.m. Outside those hours, you can leave a message or talk with another MSK provider. There is always a doctor or nurse on call. If you're not sure how to reach your healthcare provider, call 212-639-2000.

For more resources, visit www.mskcc.org/pe to search our virtual library.

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