# Cancer.Net

Oncologist-approved cancer information from the American Society of Clinical Oncology

<u>Home</u> > <u>Navigating Cancer Care</u> > <u>Diagnosing Cancer</u> > <u>Tests and Procedures</u> > Positron Emission Tomography and Computed Tomography (PET-CT) Scans

PDF generated on May 28, 2016 from http://www.cancer.net/navigating-cancer-care/diagnosing-cancer/tests-and-procedures/positron-emission-tomograp hy-and-computed-tomography-pet-ct-scans

## **Positron Emission Tomography and Computed Tomography (PET-CT) Scans** [1]

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

A PET scan is usually combined with a CT scan. However, you may hear your doctor refer to this procedure just as a PET scan. A PET-CT scan is one way to find cancer and learn its stage. 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.

Doctors also use PET-CT scans to:

- Find the right place for a <u>biopsy</u> [3].
- See how well cancer treatments are working.
- Plan <u>radiation therapy</u> [4].

#### How is a PET-CT scan different than a CT scan?

You might have had a <u>computed tomography (CT)</u> [5] scan. Doctors combine these tests because a CT scan and PET scan show different things. A CT scan shows detailed pictures of

tissues and organs inside the body. A PET scan shows abnormal activity. So, the two scans together provide more information about the cancer.

#### How does a PET-CT work?

A PET scan creates pictures of organs and tissues in the body. First, a technician injects you with a small amount of a radioactive substance. Your organs and tissues pick it up. Areas that use more energy pick up more. Cancer cells pick up a lot, because they tend to use more energy than healthy cells. Then a scan shows where the substance is in your body.

A CT scan uses X-rays to create a three-dimensional picture of the inside of the body. It shows anything abnormal, including tumors. You might get dye first, so the pictures show more detail.

#### Do these tests have risks?

PET scans, CT scans, and PET-CT scans do have risks. One risk is radiation exposure. The risk is small with a PET scan. This is because the radioactive substance only stays in your body for a short time. CT scans give you more radiation.

The benefits of these tests are usually greater than the risks. But you might have many CT scans or other tests with radiation. Tell all your doctors about your scans, so they know how many you get. Ask your doctor if you could have tests with less radiation.

### Who does my PET-CT scan?

A health care professional called a nuclear medicine technologist or radiologic technologist. This person is trained to do PET scans and certified to use the scanner. A doctor who specializes in imaging tests will read your scan and decide what it means. This doctor is a nuclear medicine physician or a radiologist.

You have a PET scan at an imaging center. Or you might have it in the radiology or nuclear medicine department of a hospital.

### Getting ready for a PET-CT scan

When you schedule a PET-CT scan, the staff will tell you how to get ready. For example, you might need to drink only clear liquids after midnight the night before the scan. Or you might need to stop eating and drinking at least four hours before the scan. Ask a member of your health care team. For some scans, you might not need to stop eating and drinking. Therefore, it is important to tell the doctor if you have diabetes.

Before a PET scan, tell your doctor or nurse about all the medications you take. Ask if you should take them the day of your scan. Also, mention any allergies and other medical conditions. If you are breastfeeding or might be pregnant, tell your doctor. A PET scan could be dangerous for the baby.

Other tips:

- The staff will ask you to sign a form that says you understand the risks and benefits of a PET scan. It also says you agree to have the test. This is called a "consent form." If you have any concerns, ask your doctor before you sign.
- Some places let patients listen to music during the scan. Ask if you can bring your own music. It might make you feel more comfortable.
- Contact your insurance company to learn if they pay for the scan. Ask if you need to pay for any of it.

#### **During the test**

When you arrive for the scan, you might need to put on a hospital gown. Or you might need to take off clothes or jewelry that could get in the way.

A technologist or a nurse will put in an intravenous (IV) line. Then he or she will put the radioactive substance in the IV. From there, it goes into your vein. The IV will feel like a pinprick. You will not feel anything from the radioactive substance.

The substance takes 30 to 90 minutes to reach the tissues that will be scanned. You need to lie quietly without moving or talking. Moving too much can cause the radioactive substance to move into organs or tissues not being studied. This makes it harder for doctors to read the scan.

For the test, a technologist will help you lie on a padded table. The table might have pillows, straps or a cradle for your head. You will probably lie on your back. But you might need to lie on your side or stomach. Your position depends on where the doctor wants to scan.

If your PET-CT is for radiation treatment planning, you might wear a mask or cast during the scan. These help keep your body in the same position as for treatment.

The PET-CT machine looks like a large donut. When it starts, the table slides quickly through the hole in the center. This helps show if you are in the right position. Then the table slides slowly back and forth. A technologist will watch the test from a nearby room. You can talk to them and they can talk to you.

#### Getting dye for the CT scan

You might get a dye for the CT scan. You might drink this, or the technologist or nurse might put it in your IV. The dye helps the pictures show more detail.

If you get dye into a vein (an IV), the area you get it might feel hot or itchy. You might have a metallic taste in your mouth. But these feelings should go away in a few minutes. If you have a more serious reaction, such as trouble breathing, tell the technologist immediately.

#### Will I be comfortable during the scan?

A PET-CT does not hurt. But you need to lie still for the entire scan. You might also need to keep your arms above your head. This could get uncomfortable. The technologist might ask you to hold your breath sometimes. Motion from breathing can cause blurry pictures.

The technologist might raise, lower, or tilt the table during the scan. This gets pictures from different angles. Ask the technologist to tell you when the table will move.

You can expect to hear whirring or clicking sounds from the machine. Some machines are noisier than others.

Your appointment will probably last about an hour. The scan only takes about 30 minutes. If the machine scans a large part of your body, the test might take longer. The technologist can tell you about how long it will take.

When the scan is finished, you might need to stay on the table while a doctor looks at the images. If they are not clear, you might need another scan.

#### After the test

You can do normal activities after the scan. This includes driving. The staff will tell you to drink several glasses of water. This helps wash the radioactive substance and dye out of your body.

#### Questions to ask your doctor

Before having an integrated PET-CT scan, consider asking your doctor the following questions:

- Who will do the PET-CT scan?
- What will happen during the PET-CT scan?
- How long will it take?
- What are the benefits and risks of a PET-CT scan?
- Is the imaging facility accredited to do PET-CT scans?

- Will I get dye for the CT scan? How will I get it?
- What can I eat or drink before the scan? What should I avoid?
- Does the hospital or imaging center have an emergency plan if I am allergic to the CT dye?
- When will I learn the test results? How will you tell me?
- Who will explain the results to me?
- Will I need other tests?

#### **More Information**

#### Tests and Procedures [6]

#### **Additional Resource**

RadiologyInfo.org: Positron Emission Tomography - Computed Tomography (PET/CT) [7]

#### Links

[1]

http://www.cancer.net/navigating-cancer-care/diagnosing-cancer/tests-and-procedures/positron-emission-tomograp hy-and-computed-tomography-pet-ct-scans

- [2] http://www.cancer.net/about-us
- [3] http://www.cancer.net/node/24406
- [4] http://www.cancer.net/node/30687
- [5] http://www.cancer.net/node/24486
- [6] http://www.cancer.net/node/24959
- [7] http://www.radiologyinfo.org/en/info.cfm?PG=pet&bhcp=1