

PET for Oncology

HCA Midwest Health System

Oncology involves the diagnosis and treatment of cancer. A PET scan can be used to help determine the severity and location of many kinds of cancer. If you or someone you care about has cancer or might have cancer, please read below to learn more about how PET works.

What is a PET scan?

PET (positron emission tomography) is a non-invasive procedure that images the function of cells to show the difference between normal and diseased tissue. A PET scan is performed with a radioactive tracer called fluorodeoxyglucose (FDG). The FDG is injected into the patient before the scan. Many tumors will absorb more of the radioactive sugar than the surrounding normal cells. A PET scan detects this abnormal cell function. These abnormal areas will be seen as areas of increased activity or “hot spots.” The physician will review the images and create a report of the abnormalities that are found.

How is a PET scan used for patients that may have cancer?

PET imaging can be useful to determine whether a tumor is malignant (cancerous) or benign (not cancerous). Unlike other imaging tests like CT or MRI that show anatomy, the PET scan looks at the physiological changes and cellular activity, so cancer may be diagnosed much earlier.

How is a PET scan used for patients who have been diagnosed with cancer?

For a patient who has been diagnosed with cancer, it is very important to properly stage the cancer. Staging is a medical term that refers to determining the phase, severity or progression of cancer. The PET scan can be very useful in determining if the cancer has spread to the lymph nodes or to other areas of the body. (The medical term for cancer spreading is called metastasis.) By properly staging the cancer, the physician will know how to treat the patient.

How is a PET scan used for patients that are being treated with cancer or have concluded their treatment?

For a patient that is currently being treated for cancer, a PET scan can help determine if the treatment is working. This will enable the physician to make changes to the treatment if it is not working or continue a treatment if it is working. For a patient who has concluded treatment of his/her cancer, a PET scan can be used to make sure there is no cancer left in the patient's body and to ensure that the patient does not have recurrence.

What do I need to tell the scheduler?

When scheduling your PET scan, inform the PET imaging staff if:

- You are taking any medication
- You are diabetic
- You are pregnant or nursing

Diet and exercise should also be discussed with the PET imaging staff.

How do I prepare for my scan?

- Fast for at least 6 hours prior to your appointment
 - Do not exercise
 - Arrive on time for the PET procedure
 - Bring the following:
 - Insurance information
 - Written order from your physician
 - Films and reports from any previous diagnostic imaging procedure, including X-ray, CT, MRI and any prior PET scans.
 - Wear warm, comfortable clothing
 - Plan to spend two to three hours at the PET imaging facility
- Exam times and procedures vary with each patient.

What is the procedure for a PET scan?

Upon arrival for your PET scan:

- Your blood sugar may be checked because the quality of the PET scan image is dependent on glucose levels.
- An imaging tracer called fluorodeoxyglucose (FDG) is administered intravenously.
- A brief resting period is required before the scanning begins for the FDG to be distributed throughout your body and to be taken up by any cancer cells that may be present. This resting period is generally 45 minutes to 1 hour.

(continued on next page)

At the time of the PET scan:

- You will be positioned on the scan table.
- The table is moved into a large opening in the PET scanner.
- The patient is asked to lie still while the PET scanner acquires the images.
- The time of the scan varies, but the scan will typically range from 25 – 50 minutes.
- Some PET facilities perform a CT scan in conjunction with the PET scan.

After the PET scan is completed:

- The patient is free to go home and resume normal activities. The patient is not dangerous to other friends and family, although a small amount of radioactivity may remain in the system for 8-10 hours. Patients are encouraged to drink a lot of water after the exam, as the tracer is excreted in the urine.
- A technologist will process the computer images.
- The reading physician will interpret these images.
- A report will be generated and forwarded to your referring physician.

If a patient is having a CT scan, does he/she need a PET scan?

A PET scan is different than a CT scan. A CT scan examines the anatomy to identify structures that look abnormal. A PET scan will look at the physiology of the body to find areas of cell activity that are abnormal. Many times a physiological change is able to be detected earlier than an anatomical change. A PET scan is very useful for cancer because sometimes the structures in the body look normal, but actually have a physiological change that indicates it is cancerous. In addition, there are times when a structure looks abnormal, but it does not have the physiological change that indicates cancer. For both of these reasons, a PET scan is a great complementary tool to CT that will be used by the physician to optimally diagnose and treat the patients' disease.

Can I have just a PET scan and not have a CT scan?

A PET scan does not replace the need for a CT scan and vice versa. Instead they are used in conjunction to make sure that the patient receives the most accurate information about his/her cancer. For this reason, many centers now have PET/CT scanners so that both procedures can be completed at the same time.

For which types of cancer is a PET scan used?

A PET scan has been shown to be a very useful tool for many types of cancer. Patients should check with their physicians to see whether a PET scan may be helpful.

Does insurance cover a PET scan?

For some types of cancer, a PET scan is covered by insurance. Medicare currently provides coverage for the following indications:

- Breast Cancer: Staging, Response to Therapy and Restaging
- Colorectal: Diagnosis, Staging and Restaging
- Esophageal: Diagnosis, Staging and Restaging
- Lung Cancer (Non-Small Cell): Diagnosis, Staging and Restaging
- Lymphoma: Diagnosis, Staging and Restaging
- Melanoma: Diagnosis, Staging and Restaging
- Thyroid Cancer: Restaging

Most private insurance companies follow the guidelines set by Medicare, but it is important to get pre-authorized prior to the scan. Some insurance companies may offer expanded coverage for other indications.

Can I still have a PET scan for types of cancer not listed above?

Medicare has recently instituted a program for patients with primary Medicare coverage called the National Oncologic PET Registry (NOPR). Under the NOPR, Medicare will provide reimbursement for all types of cancer, even if it is not listed above. The patient's physician and the PET scan provider will need to submit data to the clinical registry to get the scan covered. For more information about the NOPR, please speak with your physician.

For private insurance companies, the patient is advised to speak with his/her healthcare provider to see if the PET scan will be covered by his/her insurance.