

## Your guide to PET/CT exams



*"I'm grateful that my doctor recommended a PET/CT scan. It helped answer all my questions, and the exam was easy and comfortable."*



### About the Philips GEMINI™ PET/CT system:

Our unique Philips GEMINI PET/CT system has both PET and multi-slice CT components that can help us diagnose or track many different medical conditions. For oncology exams in particular, PET and CT image information may be used together to give your doctor a greater level of diagnostic confidence. Read inside about more unique patient benefits provided by PET/CT.

#### **WHAT IS PET?**

PET (Positron Emission Tomography) is a powerful diagnostic tool that, in many cases, renders answers that no other imaging test can provide. Used in conjunction with CT (Computed Tomography) imaging or on its own, PET is a non-invasive procedure that helps physicians in their diagnosis and treatment of certain diseases. PET imaging can reveal metabolic changes in your body that will be further examined by your physician.

#### **WHAT IS CT?**

CT stands for Computed Tomography. CT combines X-rays with computer technology to create accurate, detailed diagnostic images. CT testing is non-invasive, painless and relatively fast.

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# Q&A

about PET/CT.

## WHY ARE PET AND CT USED TOGETHER?

PET/CT represents the next level of diagnostic imaging power for oncology. PET detects metabolic signals in the body while CT provides a detailed picture of the internal anatomy, revealing the location, size, and shape of cellular activity.

Alone, each imaging test is effective for a wide variety of applications. But when the results of PET and CT scans are “fused” together, the combined image provides complete information on cancer location and metabolism.

## WHAT PATIENT BENEFITS ARE REALIZED THROUGH THE USE OF THE PHILIPS GEMINI PET/CT SYSTEM?

Clinical advantages:

- Detailed diagnostic information not available from other imaging tests
- Earlier detection of disease with fewer invasive diagnostic procedures

- Improved staging of the disease and better monitoring of cancer recurrences
- More effective tracking of the results of treatment therapy
- Can contribute to lowering the overall cost of care

Patient care advantages:

- With the push of a button, both PET and CT information can be obtained at the same time—only one appointment is necessary
- Unique, open design allows our staff to interact with patients during the exam, preventing the claustrophobic effect that a completely enclosed gantry can have on some patients
- Relatively short acquisition times (usually less than one hour)

## WHAT ARE THE CLINICAL APPLICATIONS OF PET?

Most common applications of PET are in the fields of oncology, cardiology and neurology.

ONCOLOGY (cancer) is the most important application of PET/CT and provides vital diagnostic information that can alter the course of cancer treatment and sometimes help in avoiding unwarranted surgery. PET and/or PET/CT provides critical information about whether a tumor is malignant or not; the extent of cancer; whether it has spread to other organs or not; monitoring of cancer recurrences; and monitoring the effectiveness of chemotherapy or radiotherapy.

CARDIOLOGY (heart) is another important application, where PET provides a high level of accuracy for measurement of myocardial perfusion and viability. This procedure enables the clinician to determine the value and course of treatment for patients with heart disease.

For NEUROLOGY (brain), PET provides accurate information to localize the areas of the brain causing epileptic seizures and to determine if surgery is an option. In the future, it is possible that PET will be accepted as an imaging method of choice for such conditions such as Alzheimer's disease.

## HOW LONG DOES THE EXAM TAKE AND DOES IT HURT?

In most cases you will be on the scanner table for less than an hour. The scan itself causes no pain. Because the gantry is open, you will be able to see and speak with your exam technologist. An IV line could be started in your hand or arm in order to infuse a radiopharmaceutical. Occasionally, a urinary catheter may need to be inserted for the scan.

## WHAT IS BEING INJECTED FOR THE SCAN AND WHY?

For PET scans, a very small amount of a radiopharmaceutical is infused into the bloodstream. The substance contains radioactive molecules that provide imaging information when absorbed, or concentrated in tissue. Areas with rapid cell growth, such as malignant tumors, will show much higher concentrations of the dose than normal healthy tissue. A computer records this information and converts it into pictures for diagnostic purposes. For a PET/CT scan, you may also receive a contrast agent by mouth or intravenous (IV) injection. The amount of radiation you will receive is about the same as any other radiology procedure. You should not feel any side effects from the material. Most of the radioactivity will be gone by the time you leave the department.

## HOW DO I PREPARE FOR THE EXAM?

**EATING:** You are not allowed to eat for four hours prior to your appointment. Also refrain from exercising 24 hours prior to your scan.

**MEDICATIONS:** We will ask what medications you take when you schedule your appointment. You will be provided further instructions at that time. If you feel you will need sedation or are a diabetic, contact us for further instructions prior to your scheduled appointment.

**ALLERGIES:** Notify your physician of any allergies before the exam.

**PREGNANCY:** Be sure to inform your physician if you are pregnant.

**ACTIVITY DURING THE SCAN:** During the scan, we ask that you are in a quiet, resting state. It is extremely important that you lie still throughout the scan.

## WHAT HAPPENS AFTER THE SCAN?

It is important that you drink as much water as possible for the rest of the day and empty your bladder as often as possible. This will result in a more rapid clearance of radioactivity from your body. You can drive and resume normal activities immediately after leaving the department, unless you have received sedation.

## WHEN WILL I GET THE FINAL RESULTS?

The final results will be given to your referring physician as soon as the images are analyzed, usually within two working days.

## WILL MY INSURANCE COVER THE EXAM?

Many insurance companies are reimbursing for some PET procedures, including Medicare. Please contact your insurer directly to learn about payment reimbursement.

