Positron Emission Tomography (PET Scan)

PET stands for positron emission tomography. This is a test similar to an X-ray. Pictures can be taken of a body part after injection of a very small dose of a chemical called a *radionuclide.* This is combined with sugar, water, or ammonia to give off tiny particles called *positrons.* The positrons emitted are like small bursts of energy that can be detected by a scanner. They are processed by a computer to create images. These images can be used to study different diseases. They are often used to study cancer and cancer therapy. A scan of the entire body can be done and used to study all its parts.

Because this test is tagged to a sugar used by cells, the bursts of energy show up differently in cells that use sugar faster. The computer is able to produce a color-coded picture based on this. The colors and amount of brightness on a PET image show different levels of tissue or organ function. For example, a cancer grows faster than healthy tissue and uses more sugar than normal tissue. It will absorb more of the substance injected. This causes it to appear brighter than normal tissue on the PET image. A specialist will *interpret* (read and explain) the images. Other examinations, such as recent CT (or CAT) scans or MRI scans may help with interpretation and should be brought along.

There are usually no restrictions after the test. You should drink plenty of fluids to flush the radioactive substance from your body.

BEFORE THE PROCEDURE

- PET is usually an outpatient procedure. Wear comfortable, loose-fitting clothes.
- Do not eat for four hours before the scan. You will be encouraged to drink water.
- Your caregiver will instruct you regarding the use of medications before the test.
- *Note: Diabetic patients should ask for any specific diet guidelines to control glucose (sugar) levels during the day of the test.* There are limitations with the test if your blood sugar is not controlled during or before the test.
- Be on time because of the rapid decay of the radioactive material that must be injected.

PROCEDURE

Before the procedure begins a small amount of harmless radioactive material will be injected into a vein. This means you will have a needle stick. It will take from 30 minutes to one hour for the material to travel around your body in preparation for the scan. You will lie on a cushioned table and be moved through the center of a machine that looks like a large doughnut. This is the machine that detects the positrons. It is connected to a computer that produces images that can be viewed on a monitor. This will take about 30 minutes to an hour, during which you must remain still. Let your caregiver know if this will be difficult for you. Also, let your caregiver know if you need a sedative or help dealing with *claustrophobia* (feeling uncomfortable in enclosed spaces).

HOME CARE INSTRUCTIONS

- For the protection of your privacy, test results can not be given over the phone. Make sure you receive the results of your test. Ask as to how these results are to be obtained if you have not been informed. **It is your responsibility to obtain your test results.**
- Drink several 8-once glasses of water following the test to flush the small amount of radioactive material out of your body.
- Keep your follow-up appointments.

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