

## **PET-CT**

Positron Emission Tomography (PET) detects increases in cellular metabolism (how active a cell is) often indicating the presence of disease. Computed Tomography (CT) detects changes in physical size/shape of a lesion and shows exactly where in the body the lesion is located. By combining these two imaging tools into a single scanner, we are now able to more accurately detect cancer and pinpoint its location.

### **How PET-CT Works**

Active cells such as malignant cancer cells use sugar as an energy source, inactive cells such as benign cells (non-cancerous) and scar tissue will not use sugar as an energy source.

In PET, a special type of sugar is combined with a safe radioactive component to produce the radioactive trace called FDG (Fluorodeoxyglucose). Once injected into a vein, the tracer, which emits signals detected by the scanner, will be absorbed by malignant cells but not absorbed by benign cells. This will indicate whether or not a lesion could be cancerous.

Combined with the localizing abilities of CT, this information can be used to your surgeon the exact location of a malignant lesion that needs to be removed.

### **Preparing for the scan**

Upon arrival to the clinic, you will be asked to complete a brief questionnaire. You will then be led to a private room where you will receive the tracer injection. After receiving the injection, you will be asked to relax in the uptake room for approximately 60 minutes. This provides adequate body distribution time for the tracer. When this “uptake period” is complete, we will take you to the scan room to begin imaging.

### **During your scan**

You will lie on a comfortable imaging table that will slowly move you through the scanner while data is collected. The scan will last approximately 30-45 minutes. Once the scan has been completed and reviewed for technical quality, you will be free to leave.

The entire procedure, from the time you arrive until the time you leave, will last approximately 2.5 hours. A report will be sent to your physician once the scan has been read.

### **PET-CT is very safe**

A PET-CT scan is considered a diagnostic procedure similar to those done in Radiology and Nuclear Medicine. Literally millions of PET scans have been performed worldwide without any reports of adverse reaction to the tracer. Although there is a small amount of radiation exposure involved in your PET-CT scan, the exposure level is very small and is considered safe for a diagnostic procedure.

In addition, tracers used in PET-CT have very short half-lives which means they remain in your body for a very short period of time, leaving it completely within 24 hours.

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