Imaging Tests

Imaging tests, which take pictures of the inside of your body, can play a key role in cancer care. Among other things, they can show the size and location of a tumor, whether the cancer has spread or returned, and where to focus therapy.

> *"Imaging is also used to detect the response to therapy. We'll do several scans over a period of time to see if there is a response to a various treatment, whether it be radiation or chemotherapy."*

Several different types of imaging tests are used in cancer care. Which one your provider recommends may depend on several factors including: the type of cancer you have and its location; your age and overall health, possible side effects from the test; and the cost. One frequently ordered test is an ultrasound, which uses sound waves to create pictures on a computer screen. There's no radiation involved, though ultrasound images show less detail than those from certain other tests.

X-Ray is another common imaging test.

> *"X-Ray is a high energy form of light that passes through patients and allows us to take pictures of the inside of their body."*

X-Rays are especially useful for looking at bones, but they can spot problems in certain other areas as well. While x rays expose you to radiation, the amount is relatively small. Mammography is a specific type of x-ray used in diagnosing and treating Breast cancer. Mammograms can detect masses or other abnormalities in the breast, but they can't confirm the presence of cancer. That requires further tests. A Computed Tomography, or CT scan takes multiple x-rays, which are fed into a computer to produce cross sectional images.

> "*I like to think of it a little bit like an x-ray is looking at the top of a loaf of bread. You don't necessarily get to see how deep that bread is, with the CT Scan, we can actually slice into the loaf and see inside."*
>
> *"You okay in there?" "Yes." "All right." "Thank you."*

During a CT scan you lie on a table and slide into a donut-shaped machine, where the images are taken. In some cases, you will be given a liquid known as a Contrast Dye that you swallow or get through an IV. The dye makes your organs and tissues show up more clearly on the images. CT scans expose the body to more radiation than X-rays, so you and your provider should weigh this drawback against the benefits.

The same is true for Nuclear Medicine Tests, the most common of which are Positron Emission Tomography, or PET scans. Before a PET scan, you're injected with a radioactive, sugar-based solution or "Tracer."

> *"That is circulated in the blood for about 45 minutes prior to the scan to allow any abnormal tumor cells in the body to take those up. At that point, the patient is put in the PET scanner and the tracer that was taken up by the tumor radiates from the patient and is detected by the scanner."*

The tracer passes through your body within a few hours or days.

> *"All right, here we go…."*

Magnetic Resonance Imaging, or MRI, uses high-powered magnets instead of radiation to create cross-sectional pictures of an area of your body. Before the test, it's essential to remove anything metal that you're wearing, and to tell your provider if you have a pacemaker or other implants containing metal. The machine is

loud, so headphones or earplugs are typically worn to reduce the noise. If you get nervous in small, enclosed spaces, you may be given medication to help you relax.

Other imaging tests include a PET/MRI Scan, a two-in-one test which combines images from a PET Scan and an MRI scan. There's also single-photon emission computerized tomography (SPECT) scan. This scan is a type of nuclear imaging test, which uses a radioactive substance and a special camera to create 3-D pictures of your organs.

> *"Imaging does have some limitations. It cannot detect cancer at a very, very early stage."*

Still, Imaging tests can be a valuable tool to help you get the best possible care. And as technology continues to improve, so does the information they provide.

> *"We have scanners that are always faster, more detailed. On top of that the computers that process the images are getting faster and faster. The future is very promising."*

