GE Healthcare

PET/CT for simulation.

+

Precision in motion.





Each cancer patient is just as unique as his or her cancer.

Approaches to cancer treatment are changing rapidly to address this individuality. New, more precise ways to identify and locate tumors with greater accuracy and confidence are being developed.

PET/CT has been shown to have an impact on intended patient treatment 38% of the time, according to a study by the National Oncology PET Registry.*

At GE Healthcare, the PET/CT systems we've developed optimize simulation with multi-modality data. So you can provide each of your patients with the most individualized treatment plan – and take full advantage of advanced therapies such as SRS, IGRT and IMRT.

> "The new scans show details of my body not seen in past scans, making it easier for my oncologist and me to discuss treatment options."

> > 53-year-old esophageal cancer patient from Tupelo, MS



Simulation with PET/CT precisely identifies the presence and location of tumors with the patient in the treatment position. More sensitive and specific than CT alone, it provides functional imaging information that lets you identify a tumor in relation to normal structures, so you can escalate radiation dose while sparing healthy tissue. "We are able to achieve about 15 degrees to inclination with the breast board and have no problems accommodating our patients. The wide FOV reconstruction makes all the difference in the world."

> David J. Hinckley, MS, DABR Chief Medical Physicist, Radiation Oncology Manager Riverside Methodist Hospital, Columbus, OH

Precision in practice.

Target more accurately.

"PET/CT detects subtle lesions not identified on staging scans, and detects subtle progression since the staging scans...using all the information from multi-modality imaging makes targeting more accurate."

Billy W. Loo, Jr., MD, PhD Assistant Professor Thoracic Radiation Oncology Program Leader Department of Radiation Oncology, Stanford University

"PET and PET/CT offer significant advantages in the modern radiation oncology practice. These advantages include more accurate staging, often resulting in change in management in roughly one-third of patients."

Dwight Heron, MD University of Pittsburgh Cancer Institute, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania

Improve simulation.

"If you try to use PET scans that come from a diagnostic scanner – where you have not taken into account the issues of immobilization – you really limit yourself in how you can use that PET scan to accurately define the tumor."

James J. Urbanic, MD Assistant Professor Department of Radiation Oncology Wake Forest University School of Medicine

See past motion.

"I was always taught that tumors surrounded by lung move a lot, while tumors invading the chest wall don't move at all. That was wrong. What we have found over the years is that as we image patients during the treatment process, tumors do unexpected things. We're just now at the forefront of understanding from a molecular perspective what kinds of interesting and unexpected things tumors are doing. "

Craig W. Stevens, MD Chair, Department of Radiation Oncology H. Lee Moffitt Cancer Center & Research Institute



Images courtesy of Cancer Treatment Centers of America, Tulsa, OK

Seeing the extent of motion a lesion has at the base of the lung may alter treatment plans dramatically.



Advanced GE technologies bring unmatched precision and power to every stage of simulation on your PET/CT system.

One-of-a-kind simulation.

Plan in multiple modalities.

Streamlining your workflow while sharpening your analysis, AdvantageSim[™] MD software simplifies simulation by allowing you to plan with multi-modality images.

Upload and display multiple CT, MR and PET data sets and simultaneously contour tumors in multiple modalities for more flexible, powerful workflow. Use automatic, one-click organ segmentation in just seconds.

Manage motion for smaller CTVs and precise simulation plans.

Visualize the full range of tumor motion to improve lesion detection and localization with GE's exclusive, next-generation MotionFree PET/CT imaging technologies. The result: tighter planning target volumes and more precise treatment plans.

GE was the first to bring you advanced motion management, and we've moved faster and farther than anyone else to help you capture tumor motion precisely. Seamless, integrated 4D respiratory imaging and simulation provide clinically relevant information on the true shape of objects in motion, reduce structure distortion and identify the dynamic range of motion. So you can better assess motion's impact on your simulation planning.

Delivering four times the reconstruction speed, GE-exclusive IBM BladeCenter® cell technology* makes MotionFree PET/CT applicable for routine clinical use. Acquire PET and CT data in sync with respiratory motion for better attenuation correction.

Simplify definitive reading, quantitative assessment and confident reporting.

With PET VCAR, you can monitor your patients' progress effectively and accurately by quantitatively assessing their response to therapy. PET VCAR improves your PET reading workflow, giving you an efficient way to visualize, track and manage multiple lesions and multiple exam data over an unlimited period of time.

You can define tumor volumes easily, validate measurements quickly and perform segmentations automatically. Innovative, customizable reporting tools let you provide a powerful rendering of your findings to referring physicians.

*Available on the Discovery PET/CT 600 and Discovery PET/CT 690

CT simulation



PET/CT simulation



Images courtesy of Holy Name Hospital of Teaneck, NJ

Adding PET to the CT simulation helps minimize target volumes.



"The motion management applications on our Discovery PET/CT 600 help us identify smaller lesions than before and we use those images to improve patient outcomes via better simulation plans and treatment delivery."

Timothy McCay, DO Radiologist Cancer Treatment Centers of America Southwestern Regional Medical Center, Tulsa, OK



With a GE PET/CT system, you'll meet the needs of your patient population. WideView full-display field-of-view imaging and a robust patient table let you provide precision simulation for patients of virtually any size and position.

Fully fitting.

See everything in the bore.

With GE's WideView full-display field-of-view you can manage your most challenging patients – including the obese, where seeing the surface of the skin is important.

Accommodate more patients.

The new, more robust patient table on GE PET/CT systems accommodates patients weighing up to 500 lbs. (227 kg.), with a stiffer cradle for more secure positioning. The table can also be lowered all the way to the floor, helping minimize risk associated with falls and making it easier for your patients to get on and off.

Control more conveniently.

System controls and displays conveniently located on both the front and rear of the scanner give you more flexibility in patient contact and system control.

Conventional PET/CT with 50 cm CT

GE WideView PET/CT with 70 cm CT



Images courtesy of Gundersen Lutheran, La Crosse, WI

WideView full field-of-view (FOV) imaging displays the entire bore – minimizes artifacts in the simulated field-of-view and allows you to see all the way to the skin.



Bottom line,

it's smart business.

Streamlined support.

Your GE PET/CT system will be in the hands of one of the industry's largest, most experienced service forces. Always-on, Internet-connected access to our online service center gives you instant answers to your questions on system performance, applications, support and training.

Proven predictability.

GE PET/CT systems have been rated the most reliable in the industry for three years running by IMV ServiceTrak.™* This dependable performance is built into the robust system design of your PET/CT system. InSite™ remote service helps eliminate surprises to keep your scanner up and running.

Optimized productivity.

In addition to an easy-to-use operator console, your GE PET/CT system has the same CT interface you're accustomed to using, making it easier for staff to operate efficiently in a shared-resource environment.

Stand-alone CT.

Use your system for PET/CT studies, or as a stand-alone scanner for individual CT or PET scans. With this multi-use flexibility, you'll better serve your entire patient community and get maximum utilization and return on investment from your system.

Simplified workflow.

The first truly integrated PET/CT operator's environment, the Discovery Dimension console optimizes your PET/CT data integration and streamlines your workflow from calibration to acquisition to post processing.

Easy upgrades.

Our upgrade offerings help protect your PET/CT investment against obsolescence, with the latest PET/CT capabilities to keep you current and on the cutting edge of patient imaging.

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About GE Healthcare

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement and performance solutions services helps our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

Our "healthymagination" vision for the future invites the world to join us on our journey as we continuously develop innovations focused on reducing costs, increasing access and improving quality and efficiency around the world. For more information about GE Healthcare, visit our website at www.gehealthcare.com

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