Q.Suite for SPECT/CT
The power to personalize
Harnessing the power of nuclear medicine

At GE Healthcare, we believe in a diagnostic tool that’s efficient, precise, sophisticated — and with a future full of potential. It’s nuclear medicine, and we’re dedicated to harnessing its power.

To us, that means investing in nuclear medicine and championing its use around the world. We’re helping organizations harness the power of nuclear medicine for high image quality, low injected dose, and reduced exam and reconstruction times. We’re pioneering the use of quantitation techniques to support physicians with diagnostic and treatment insights.

Personalized care by the numbers

The value of SPECT/CT in diagnostic imaging has been established for years — but now, we’re taking it personally. With new quantitative tools that generate accurate and more consistent measurements, clinicians can plan treatment therapy quicker and easier than ever before. As a result, we are helping clinicians reach a bold new paradigm: personalized care.

It’s the future of SPECT/CT. Developed in collaboration with leading researchers, the tools within Q.Suite are helping make the relative real, the abstract personal.
Absolute quantitation. Absolutely personal.

Quantitation results play an important role in relative, qualitative assessments for nuclear medicine imaging. Q.Suite represents the next step in GE Healthcare’s vision to enable effective absolute quantitative SPECT/CT imaging. Its next generation tools span the workflow today—and they provide a foundation for further advancement tomorrow.

With a potential for variation throughout the workflow, we designed Q.Suite to address these key areas: camera calibration, quality control, data integrity, reconstruction algorithms and analysis and reporting. By combining the capabilities of Q.Suite with updated clinical practices, we believe the consistency of SPECT/CT measurements can increase dramatically.

Exam accuracy. All the time.

Camera calibration corrects system performance for the radioisotope used and makes sure images are uniform across isotopes. Single isotope calibration, a novel feature for GE Healthcare, calibrates the system with one single isotope and extrapolates that calibration across the range of imageable isotopes. Or, the system can be calibrated uniquely for each isotope planned for use, enabling the clearest image for each individual isotope.

A full range of camera corrections are made—including energy, linearity, uniformity, center of rotation, isotope decay, dead time and system sensitivity—to compensate for the many types of isotopes, imaging times and varying levels of activity.


Effective quality control ensures that the SPECT and CT scanners are correctly aligned at every exam, and motion detection and correction compensate for patient motion during the scan. Photon maps from each isotope have different energies, and the right collimators are put to use for proper energy performance, shielding and resolution.

The right data, used right.

The data output from the SPECT and CT scanners are registered and linked to the proper imaging session. Scanner registration is checked at the time of the test; registration of the output verifies it was done right for diagnostic confidence. Segmentation tools help ensure that the organs, lesions and tumors of interest can be seen in greater detail and defined much more clearly.

Making information personal.

Reconstruction algorithms in Q.Suite, including Evolution and Q.AC† for attenuation correction, bring together inputs from all aspects of the test. The scatter and attenuation data, the radioisotope information and injected dose activity, imaging system sensitivities, measured or defined. And patient characteristics: weight, height and body habitus. The algorithms then accurately quantify SPECT standard uptake value and produce high quality images for diagnostic confidence.

† Q.AC feature only available in the Discovery NM/CT 670 Pro.

Dosimetry Toolkit, an advanced clinical application, has proven the potential of quantitative SPECT/CT with its convenient tools for organ segmentation, registration and activity calculations and calculating drug residence time for radioisotope therapy planning.

Counting uptakes and outputs.

Without an application to present the data to the diagnostic clinicians or the referring physician in a meaningful way, quantitative results do not deliver ready insights. The two analysis and reporting applications in Q.Suite simplify organ definition and activity calculations to help raise report quality while improving processing workflow and productivity.

Q.Metrix is a user-friendly application with SPECT and CT segmentation tools for quantifying and reporting radiopharmaceutical uptake in the organ or lesion of interest, using patient demographic information to calculate SPECT standard uptake values.‡

‡ Various studies have illustrated that SPECT SUV may have potential clinical importance, and the clinical value has not yet been demonstrated. The clinician is ultimately responsible for the final interpretation and diagnosis based on standard practices and visual interpretation of all SPECT data.

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A personal commitment

Our Q.Suite technology may help clinicians gauge a patient’s progress more accurately than ever before, and optimize treatment, based on the patient’s unique response over time.

The advanced tools in Q.Suite help ensure the accuracy of the images, consistent performance from the SPECT and CT equipment, and the integrity of the data generated. All the relevant information comes together for analysis and is delivered in a way that is meaningful and useful for clinicians involved in the patient’s care.

Together with our customers, we are focused on improving quality, access and affordability in SPECT/CT imaging to bring more personalized care to the community of patients you serve. With Q.Suite, that means:

Responsible care
Q.Suite is designed to help physicians assess therapy response early and effectively, allowing oncologists to optimize their treatment plan. More effective therapy may improve your patient’s quality of life and overall outcome as well as reduce the cost burden of ineffective treatment.

Meaningful collaboration
Q.Suite is the product of close, ongoing partnerships between technology leaders and clinical researchers. We learned about the challenges of quantitative SPECT/CT from our customers and are developing Q.Suite with their help. We will continue on this path, bringing tools to clinicians to help them drive toward a new standard of patient care.

Sustainable advancement
We are building Q.Suite on a platform that can support ongoing development in the future. It will constitute an important step forward in capturing consistent quantitative measurements, and we will continue to invest in quantitative imaging tools in the years to come.
About GE Healthcare

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter — great people and technologies taking on tough challenges. From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

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