Pioneering precision: GE HealthCare aims to elevate clinical care through total body PET/CT technology with Stanford Medicine

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- GE HealthCare and the Department of Radiology at Stanford Medicine aim to explore total body positron emission tomography/computed tomography (PET/CT) technology for new clinical pathways to help improve patient outcomes.
- Total body PET/CT technology[i] is designed with the goal of supporting personalized medicine practices like theranostics, improve healthcare system efficiency, and provide scalable solutions for imaging practices and healthcare facilities.

CHICAGO--(BUSINESS WIRE)--Jun. 19, 2025-- Building on a collaboration that spans more than three decades, GE HealthCare has renewed its research collaboration with Stanford Medicine – with one of their key intentions being the development and research of innovative total body PET/CT technology.[i] This effort is expected to explore new clinical pathways and help enhance patient outcomes through innovative imaging solutions.

“PET/CT has revolutionized the way we understand and treat disease by allowing us to visualize biological processes at the cellular level,” explains Dr. Quynh-Thu Le, interim Chair of the Department of Radiology, Stanford Medicine. “With total body PET/CT, we can explore new frontiers. Not only do we expect it will be faster, but we also believe it will fundamentally expand what is possible in translational research.”

Molecular imaging – and specifically the utilization of PET/CT scanners – offers opportunities for precision care across various disease states. It supports theranostics in oncology for advanced prostate cancer treatment, helps streamline radiation oncology workflows, aids in beta amyloid imaging for Alzheimer's evaluation and monitoring, and assists in myocardial perfusion evaluation for diagnosing coronary artery disease. Unlike other imaging procedures, PET/CT technology visualizes, characterizes, and quantifies biological processes at the cellular level, aiding in early disease identification, detailed assessment, and treatment planning. It is a non-invasive solution, providing critical insights that help enhance patient care and can support accelerated drug development.

“This technology is designed to offer a level of sensitivity and spatial resolution that can change how we design and conduct molecular imaging studies,” adds Dr. Andrei Iagaru, Division Chief of Nuclear Medicine and Molecular Imaging, Stanford Medicine. “For example, such technological characteristics can create opportunities to reduce anesthesia use in pediatric imaging by dramatically shortening scan times and enable the exploration of dual-tracer studies and early diagnosis with far greater precision. Total body PET/CT technology is an ideal tool to evaluate biodistribution and dosimetry of new PET radiopharmaceuticals in our first human studies.”

Knowing the potential of this technology, researchers at Stanford Medicine and engineers at GE HealthCare aim to advance a next-generation PET/CT designed to provide new opportunities to improve diagnosis, staging, therapeutic planning, and evaluation of treatment response across various care pathways. By leveraging the technology’s capabilities, both institutions believe it has the potential to drive new clinical pathways, expedite the development and translation of new diagnostic and therapeutic agents, support existing molecular imaging and theranostics applications, and promote enhanced healthcare system efficiency.

“The high throughput we anticipate from this technology could ultimately help improve access for our patients and reduce wait times to their next appointment,” says Dr. Erin Grady, incoming Division Chief of Nuclear Medicine and Molecular Imaging, Stanford Medicine.

GE HealthCare’s total body PET/CT innovation

In collaboration with a select group of leading healthcare institutions around the world, GE HealthCare aims to demonstrate how total body PET/CT imaging can overcome barriers that previously hindered widespread adoption of PET/CT beyond oncology. This initiative seeks to expand the use of PET with the goal of leveraging ultra-high sensitivity total body PET/CT technology to push the boundaries of oncology by significantly reducing scan time and the injected dose – important considerations for all patients, but particularly vulnerable patients like pediatrics, where ultra-fast scans can allow reduction in anesthesia and sedation in children.

To support this advanced research, encourage new discoveries, and meet growing clinical demands, GE HealthCare designed its total body PET/CT technology with the goal of enabling ultra-low dose scans; fast acquisitions; multi organ dynamic imaging; and dual tracer imaging. All important factors that help improve diagnosis confidence. In parallel, the technology aims to improve healthcare system efficiency by enhancing clinical workflows, supporting routine clinical practice, and improving operational efficiency.

“At GE HealthCare, innovation is in our DNA. Our total body PET/CT technology represents the next chapter in our enduring commitment to advancing medical imaging,” adds Jean-Luc Procaccini, President & CEO, Molecular Imaging and Computed Tomography, GE HealthCare. “We’re proud to collaborate with world-class institutions to explore new clinical frontiers in oncology and beyond. Together with our MIM software solutions, we’re designing flexible, AI-enhanced tools that not only aim to enhance diagnostic confidence and operational efficiency but also help clinicians deliver more precise, personalized care that can truly improve patient outcomes.”

GE HealthCare has a long-standing history of and commitment to pioneering next-generation imaging technology. From the first commercially available PET/CT solution, Discovery LS,[ii] to the development of the first silicon-based photon counting computed tomography (CT) prototype,[iii] GE HealthCare continues to push the boundaries of medical imaging for the benefit of clinicians and patients worldwide.

As such, GE HealthCare is at the forefront of driving a connected healthcare transformation and revolutionizing precision care.

For more information on GE HealthCare’s impressive Molecular Imaging portfolio, visit gehealthcare.com.

About GE HealthCare Technologies Inc.

GE HealthCare is a trusted partner and leading global healthcare solutions provider, innovating medical technology, pharmaceutical diagnostics, and integrated, cloud-first AI-enabled solutions, services and data analytics. We aim to make hospitals and health systems more efficient, clinicians more effective, therapies more precise, and patients healthier and happier. Serving patients and providers for more than 125 years, GE HealthCare is advancing personalized, connected and compassionate care, while simplifying the patient's journey across care pathways. Together, our Imaging, Advanced Visualization Solutions, Patient Care Solutions and Pharmaceutical Diagnostics businesses help improve patient care from screening and diagnosis to therapy and monitoring. We are a $19.7 billion business with approximately 53,000 colleagues working to create a world where healthcare has no limits.

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[i] Technology in development. Not for sale. Not cleared or approved by the U.S. FDA or any other global regulator for commercial availability.

[ii] Hicks, Rj & Lau, Ewf & Binns, Ds. (2007). Hybrid imaging is the future of molecular imaging. Biomedical imaging and intervention journal. 3. e49. 10.2349/biij.3.3.e49.

[iii] GE HealthCare. "Photon Counting CT." *GE HealthCare*. Accessed June 10, 2025. https://www.gehealthcare.com/products/computed-tomography/photon-counting-ct.

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