Press release

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Next-generation total-body PET scanner can produce diagnostic-quality images in as little as one minute

(Vienna, Austria, Sunday, 18 October 2026) A next-generation total-body PET/CT scanner can produce diagnostic-quality images in as little as one minute of scanning, according to research presented today at the 39th Annual Congress of the European Association of Nuclear Medicine (EANM'26).[1] Even its fastest images were rated more highly on average than those from a standard PET/CT scanner.

PET/CT is widely used to diagnose, stage and monitor cancer. Conventional PET/CT scanners have a short axial field of view, meaning they image the body section by section, typically requiring five to six 'bed positions' to cover the body from head to thigh.[2] Long-axial field-of-view (LA-FOV) systems capture a much larger part of the body at once and detect more of the signal emitted by the radiotracer, raising the possibility of much shorter scans without sacrificing image quality.[2,3]

In the EQUIP study, researchers at the Peter MacCallum Cancer Centre in Melbourne, Australia, evaluated a next-generation 128 cm LA-FOV PET/CT system (GE HealthCare Omni 128 cm).[1,4] Twenty-four participants who had received one of five radiotracers (^{18}F-FDG, ^{18}F-DCFPyL, ^{68}Ga-DOTATATE, ^{68}Ga-PSMA or ^{124}I) underwent a standard-of-care scan on a conventional short-axial field-of-view (SA-FOV) PET/CT system, followed by a 10-minute scan on the LA-FOV system. The researchers then reconstructed images from the LA-FOV scan using just five, three, two and one minute of data.

Two nuclear medicine specialists, who were unaware of the acquisition times, graded the images on a five-point scale for overall diagnostic quality, sharpness and lesion conspicuity (how clearly lesions stand out from surrounding tissue) and image noise.

Mean image scores were in the good or excellent range at every acquisition time. Average diagnostic quality scores were 5.0 for the ten- and five-minute images, 4.9 for the three- and two-minute images and 4.5 for the one-minute images. By comparison, the conventional scanner scored 3.9 for diagnostic quality, with lower average scores than the LA-FOV system across all assessed categories and acquisition times.

"A one-minute scan on this system gave us images that our readers rated more highly than the standard-of-care scans we perform every day," explained lead author Dr Cameron Pain. "That was the striking finding: even when we cut the acquisition time by 90%, image quality exceeded current standard-of-care methods."

All images acquired for two minutes or longer scored at least four out of five in every category, and all one-minute images scored at least three out of five. Image scores declined as scan times shortened, with the largest decrease at one minute, particularly for image noise. Even so, these images were closer in quality to the full 10-minute LA-FOV images than the standard-of-care SA-FOV images.

Objective measurements of image quality also supported the findings, with signal-to-noise ratios in

healthy liver tissue remaining broadly consistent between the ten-minute and one-minute images for the radiotracers assessed.
Shorter scans have the potential to make PET/CT more comfortable for patients, particularly those who are in pain or find it difficult to lie still, while also reducing image blurring caused by movement. They could also help imaging departments scan more patients each day. Alternatively, the higher sensitivity of LA-FOV systems could be used to reduce the amount of radiotracer administered.[3]

"Total-body PET gives us choices we haven't had before," said Dr Pain. "We can use its sensitivity to scan patients faster, to lower the radiation dose and to see disease more clearly."

Further research will be needed to confirm these findings. Image quality was assessed using reader scores rather than measures of diagnostic accuracy, so larger studies will be important to confirm that very short scans do not miss small or faint lesions and to determine how faster scanning affects workflow and patient experience in routine clinical practice.

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Notes to Editors

A reference to the 39th EANM Annual Congress (EANM'26) must be included in all coverage and/or articles associated with this study.

For more information or to arrange an expert interview, please contact press@eanm.org

About the study authors

Cameron Pain is a nuclear medicine physicist in the department of physical sciences at Peter MacCallum Cancer Centre in Melbourne, Australia. He specialises in positron emission tomography imaging, doing research in image reconstruction, deep learning, dosimetry and monte carlo modelling, combined with a decade of experience in clinical medical physics.

About EANM

EANM is the largest non-profit medical organisation dedicated to nuclear medicine in Europe. Since its establishment in 1985, EANM has consistently aimed to provide an interactive platform for the sharing and discussion of cutting-edge developments in the field.

EANM brings together nuclear medicine professionals from a range of medical specialties. EANM also collaborates with 40 European nuclear medicine national societies, 20 non-European affiliated societies, EU institutions, international bodies, industry and other medical societies to enhance patient care through the transformative potential of nuclear medicine. The Annual Congress, which attracts around 9,400 participants, stands as a testament to the organisation's active engagement and leadership in the field.

References

1. Pain C, Corlett A, Jackson P, Alipour R, Kong G, Wong A, et al. Fast-acquisition PET-CT using a long-axial field-of-view (LA-FOV) total body PET scanner: results from the EQUIP study. Presented at: 39th Annual Congress of the European Association of Nuclear Medicine (EANM'26); 18 October 2026; Vienna, Austria. Presentation OP-031.

2. GE HealthCare. *GE HealthCare announces CE Mark for the Omni 128cm total body PET/CT system*. 28 November 2025. Available at: https://www.businesswire.com/news/home/20251128007885/en/GE-HealthCare-announces-CE-Mark-for-the-Omni-128cm-total-body-PETCT-system. Accessed 5 October 2026.

3. van Sluis J, Borra R, Tsoumpas C, van Snick JH, Roya M, ten Hove D, et al. Extending the clinical capabilities of short- and long-lived positron-emitting radionuclides through high sensitivity PET/CT. *Cancer Imaging.* 2022;22(1):69. doi:10.1186/s40644-022-00507-w.

4. ClinicalTrials.gov. *EQUIP - Evaluation of Quality of Imaging on a Next-generation Total Body PET Scan in Comparison to Conventional PET*. NCT07263815. Available at: https://clinicaltrials.gov/study/NCT07263815. Accessed 5 October 2026.