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uPMR 790

HD TOF PET/MR

Next Generation. Now Realized.

ABOUT UIH

Shanghai United Imaging Healthcare Co., Ltd. develops and produces a full portfolio of advanced medical imaging and radiotherapy equipment and offers medical IT and intelligent solutions. Founded in 2011 and headquartered in Shanghai, the company has subsidiaries and R&D centers across China, US, and other parts of the world. Half of its 5,000 employees work on research and development. To date, more than 3,000 hospitals worldwide are using UIH products.

To learn more, visit https://www.united-imaging.com

uPMR 790

The uPMR 790 enables simultaneous PET/MRI imaging with high temporal and spatial resolution. Next generation PET and MRI technologies redefine routine clinical imaging of real-time anatomical and functional imaging, while redefining cutting edge research imaging.

| Next Generation PET/MR Imaging

| Redefine Routine Clinical Imaging

| Redefine Cutting Edge Research

Next Generation PET/MR Imaging

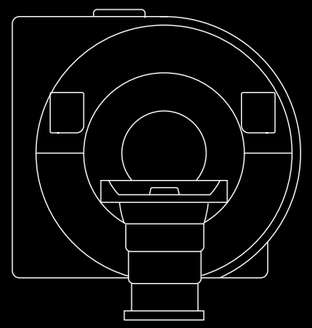
The next generation PET and MRI technology available with the uPMR 790 provides fast, simultaneous high resolution PET and MR 3D imaging, redefining clinical routine.

Integrated PET/MR Development History

2010
Avalanche Photo-diode (APD), non-TOF

2014
Synchronous Acquisition Technology

2015
Silicon Photomultipliers (SiPMs), TOF

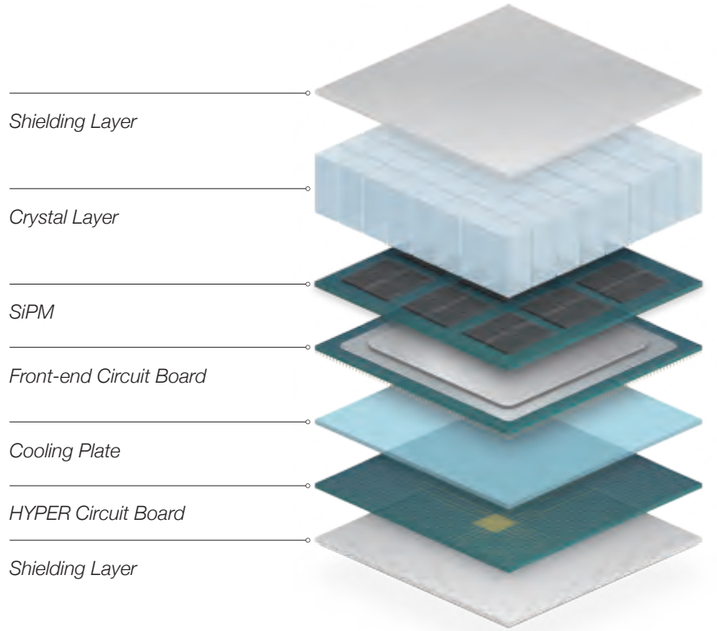


TODAY

MR: With uCS platform for fast MR imaging

PET: TOF technology based on integrated light guide digital detector and SiPM

PET/MR: Simultaneous acquisition with space-time synchronization

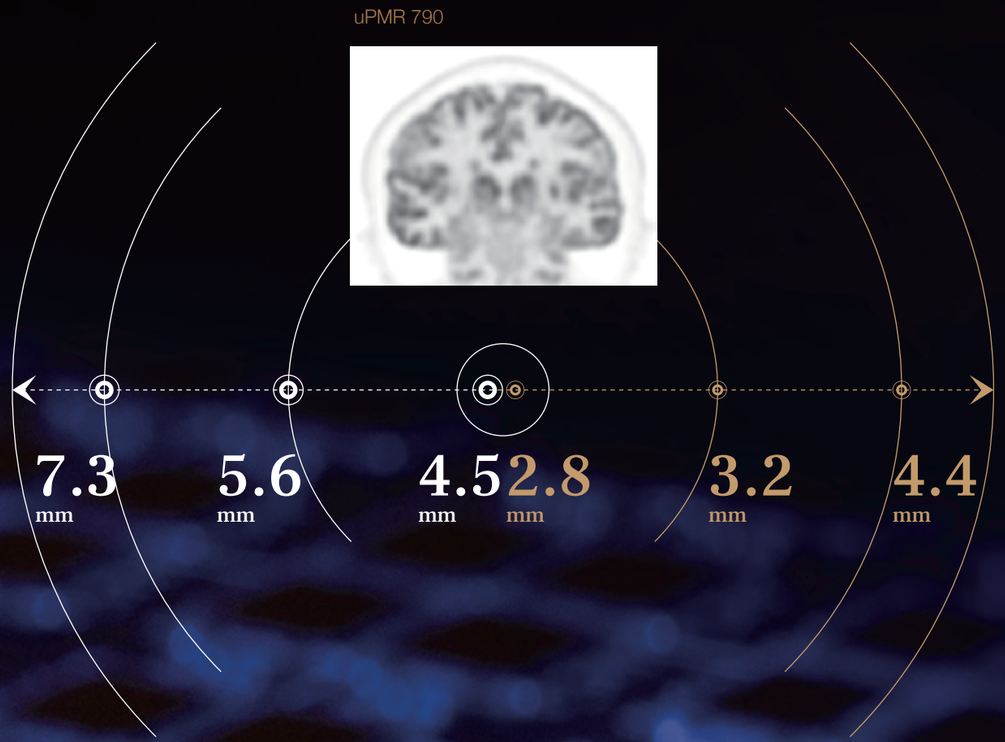


Redefine Routine Clinical Imaging

Redefining the standard of precision of PET/MR imaging.

Complete Field-of-View (FOV) High Resolution Imaging

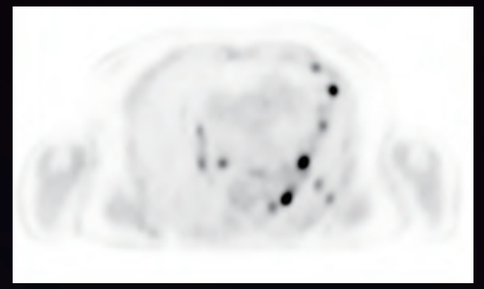
The integrated digital integrated Silicon Photomultipliers (SiPM) can achieve an ultra-high NEMA spatial resolution of 2.8mm across the entire FOV.



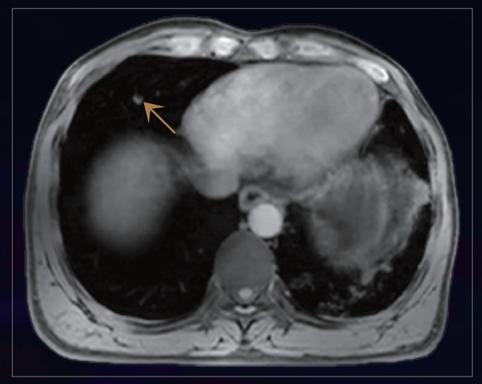
Accurately Locate Small Lesions

The 0.5mm 3D isotropic MR resolution combined with 2.8mm NEMA resolution PET imaging and TOF, the uPMR 790 is designed to provide a high level of image resolution to visualize small lesions.

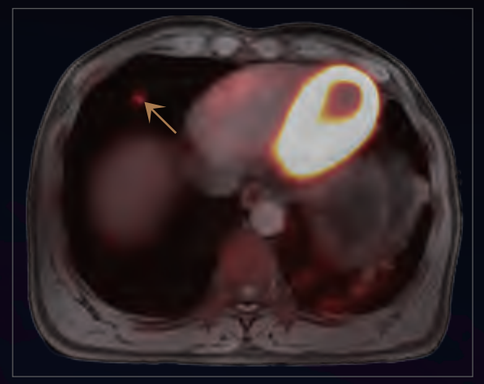
Non-TOF



TOF



Accurately Locate Small Lesions



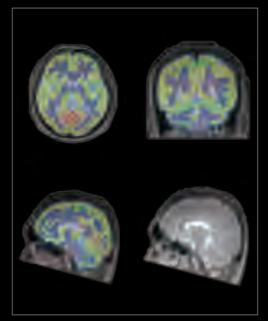
5mm lesion

Redefine Routine Clinical Imaging

Redefining the standard of PET/MR imaging acquisition time.

uCS Imaging Platform

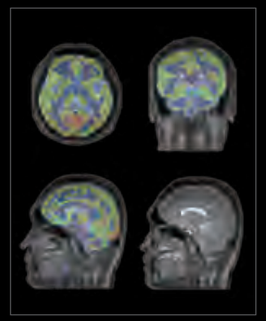
The uPMR 790 achieves both ultra-fast and high quality 3D MR imaging by utilizing uCS imaging platform which combines compressed sensing technology along with other major acceleration techniques to exploit time data.



Conventional Accelerated Imaging

T2W 2D 0.8×0.8×5.0mm³

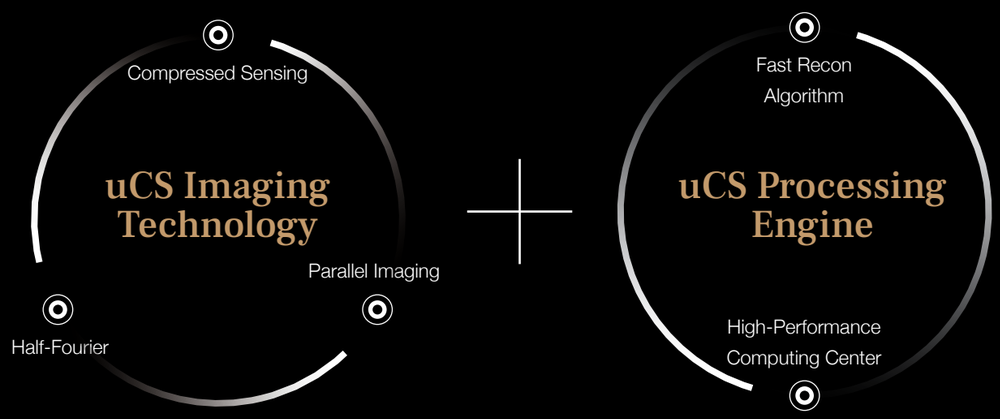
Scan time 1:52 min



uCS Acceleration imaging

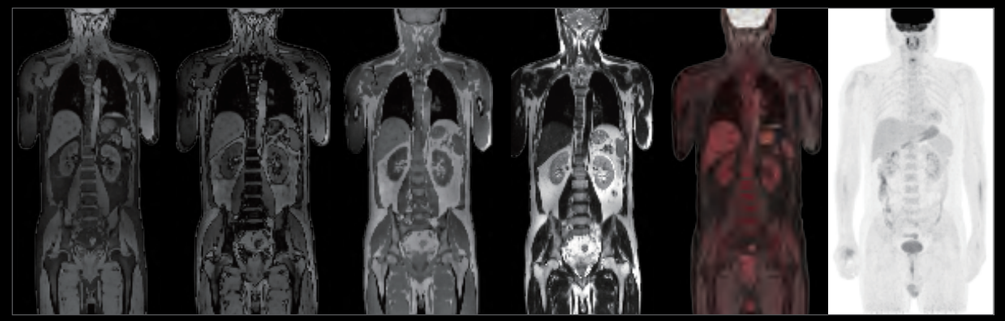
T2W 3D 1.0mm isotropic

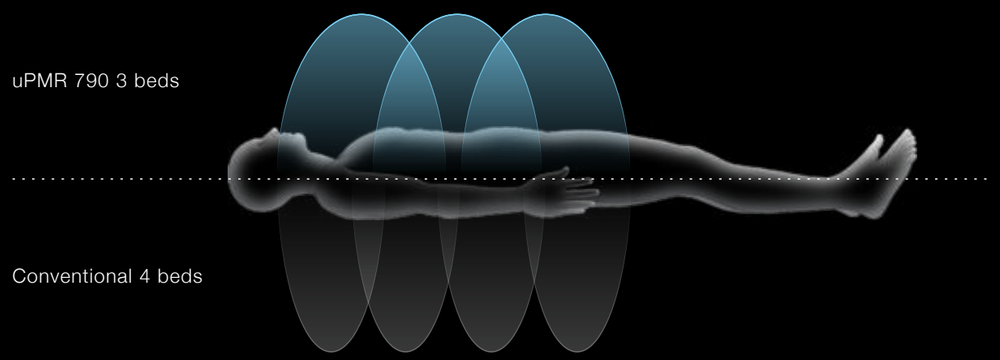
Scan time 1:50min



PET/MR Detector

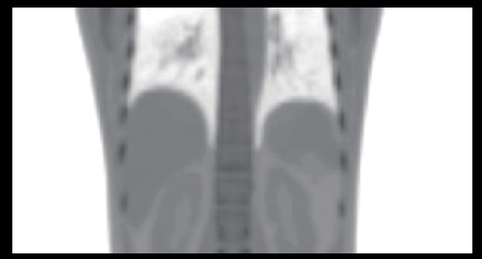
The uPMR 790 utilizes an ultra-long 32cm high resolution PET detector with the MRI uCS imaging platform to provide an ultra-fast 3D PET/MRI scan.





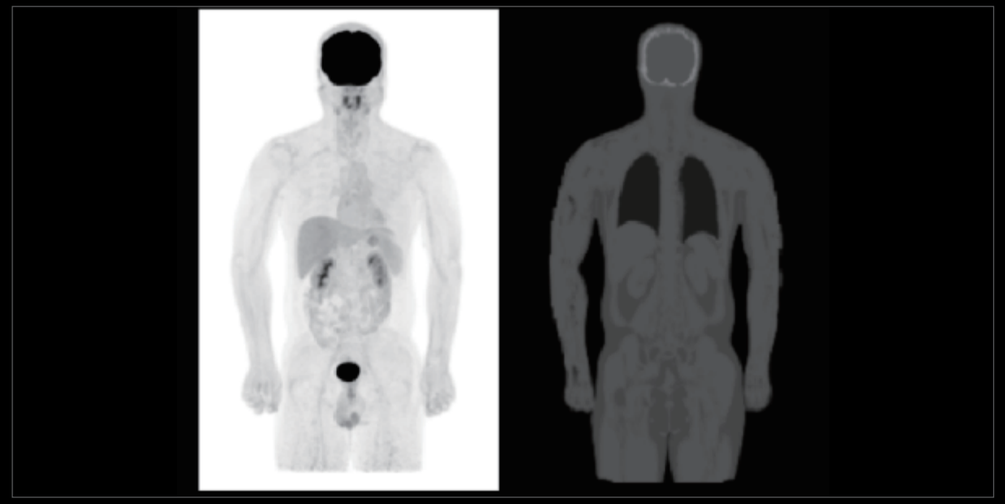
Intelligent Attenuation Correction

The uPMR 790 MRAC (MR-based Attenuation Correction) employs tissue segmentation of MR images to achieve accurate PET correction and quantification, which improves image quality and quantitative accuracy.



CT Attenuation Correction Map

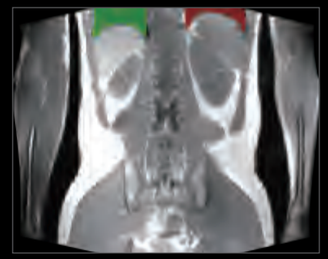
MRAC Map



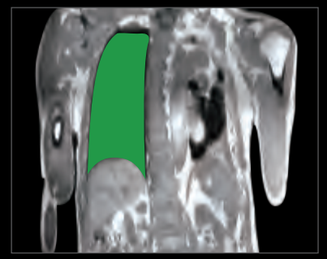
QUICK 3D WFI for whole-body AC

Precise attenuation correction algorithm, suitable for a variety of clinical scenarios.

Integrated pulmonary segmentation

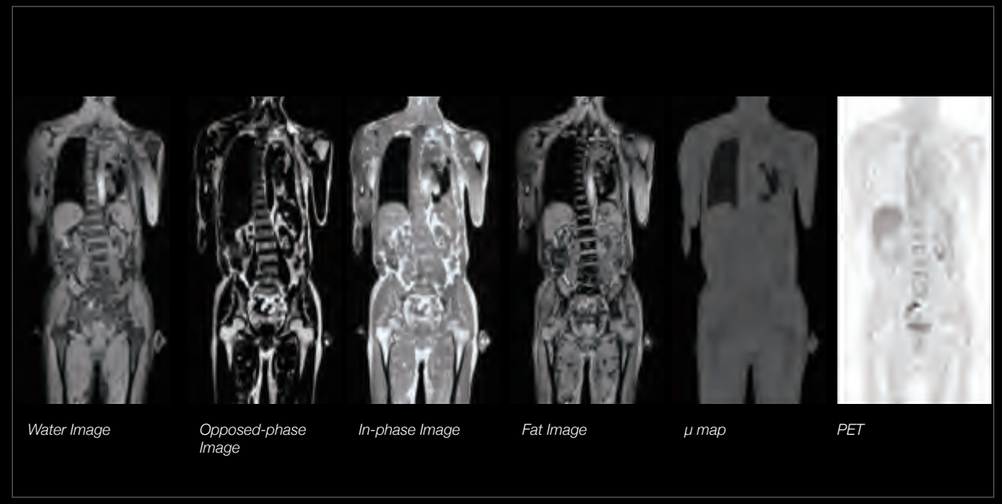


Partial pulmonary segmentation



Pulmonary segmentation in pathological conditions

MRAC Performance with Pulmonary Fibrosis.



Water Image

Opposed-phase Image

In-phase Image

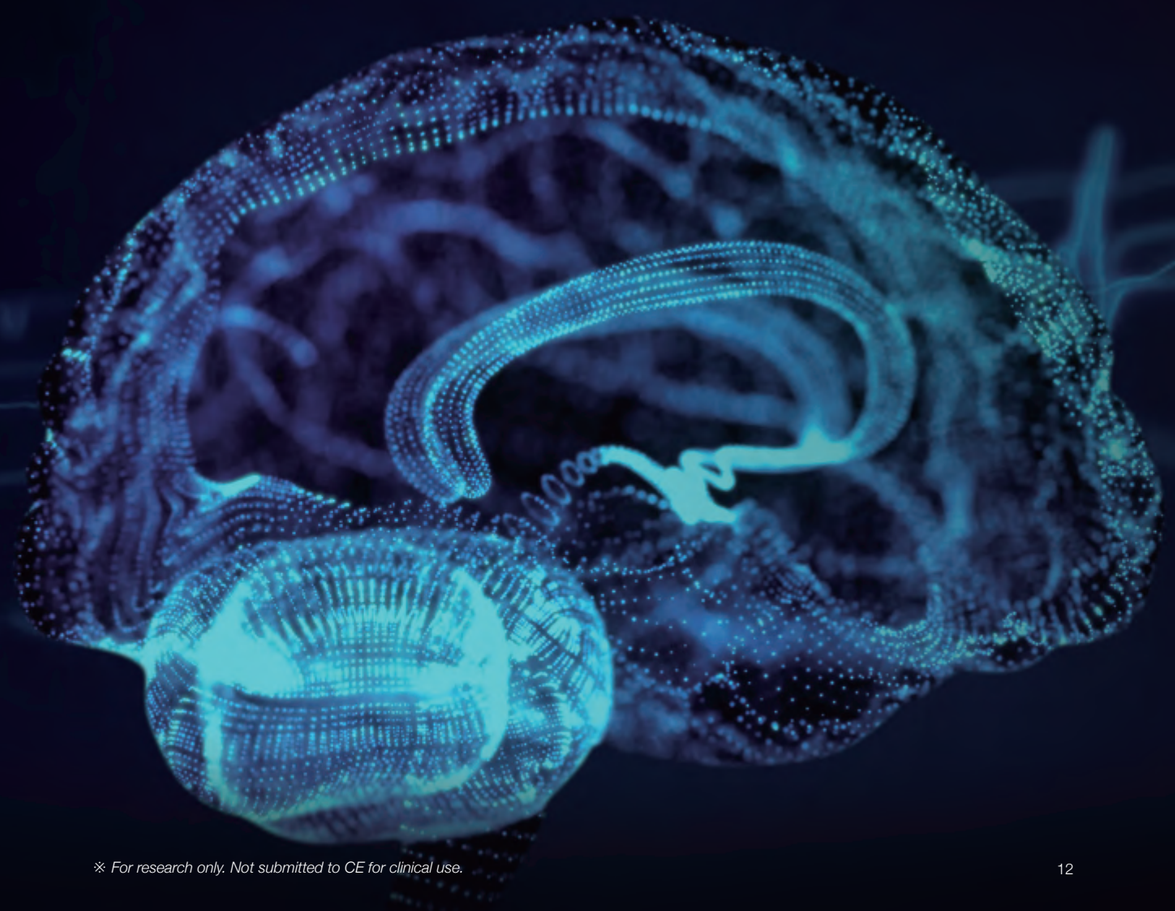
Fat Image

μ map

PET

Redefine Cutting Edge Research

For the first time, the uPMR 790 together with the uSync research collaboration platform* provides the ability to study the original simultaneous fused data. Together, they provide PET and MR image data at the sub-millisecond and sub-millimeter level. This opens new research opportunities and a new chapter for PET/MR research.



※ *For research only. Not submitted to CE for clinical use.*

uSync

Motion

Greatly improves the precision of motion correction to accurately capture physiological and molecular information.

Dynamic

PET/MR synchronous dynamic imaging allows for tracking of dual tracers.

Neuro

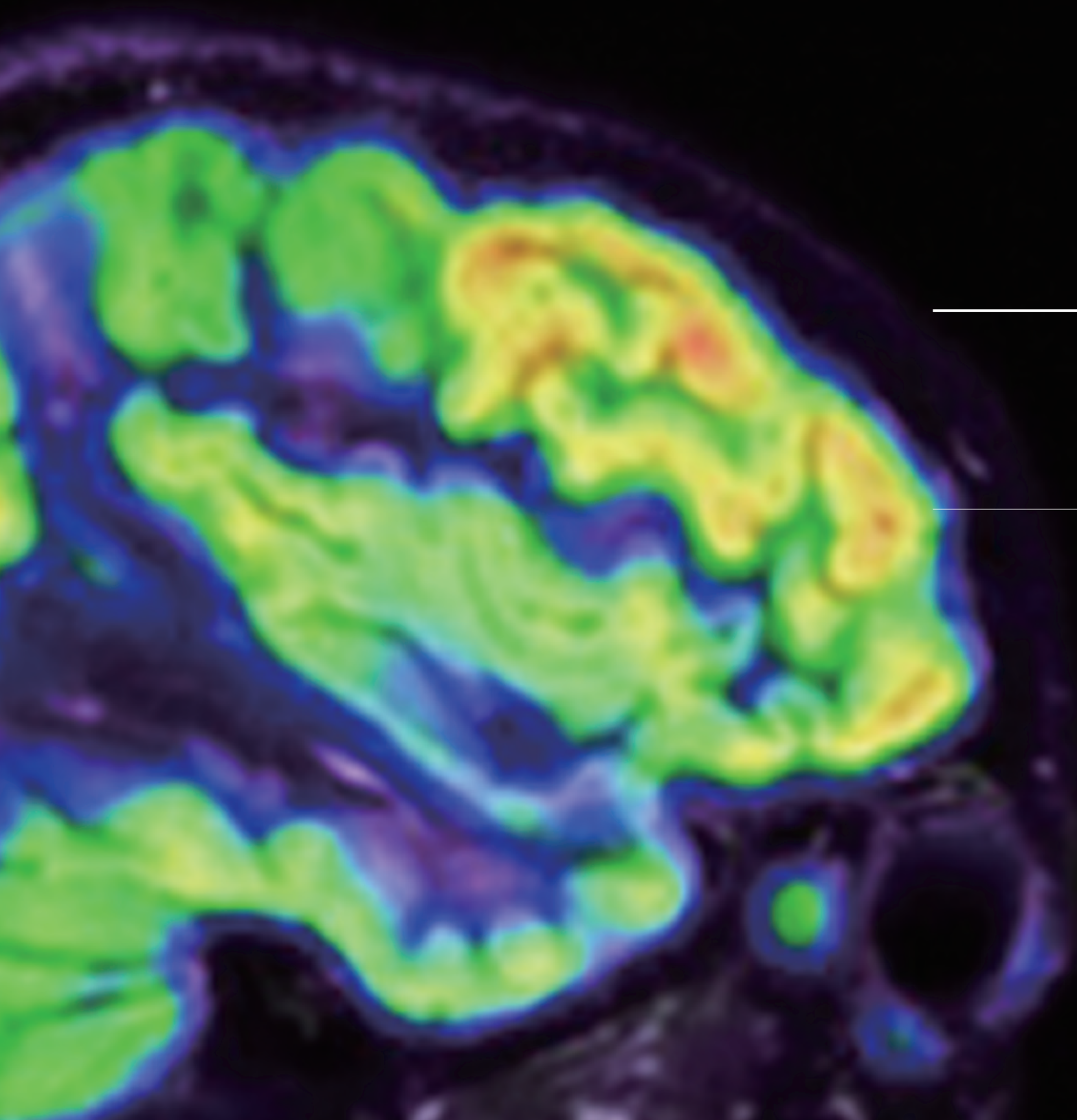
Allows for accurate brain image segmentation utilizing PET/MR neuro-brain atlas analysis.

PAS

Offers dedicated protocols and coils used for ultra-high resolution animal imaging.

Radiomics

Accurately allows for the study of tumor radiomics through multi-modal and multi-paramater analysis.



Clinical Gallery

Whole Body

174cm, 77kg, 8.86mCi, 18F-FDG.

T2W WB

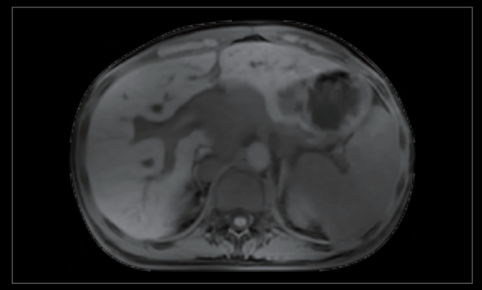
PET

Fusion

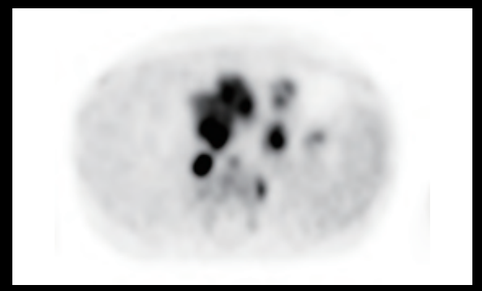
PET MIP

Whole Body

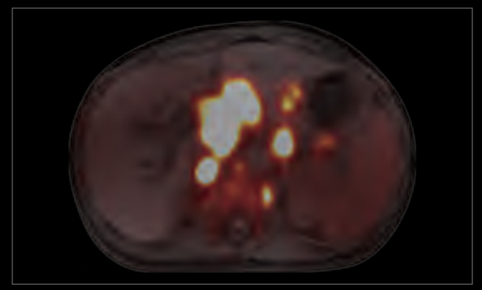
165cm, 46kg, 5.1mCi, 18F-FDG, lymphoma.



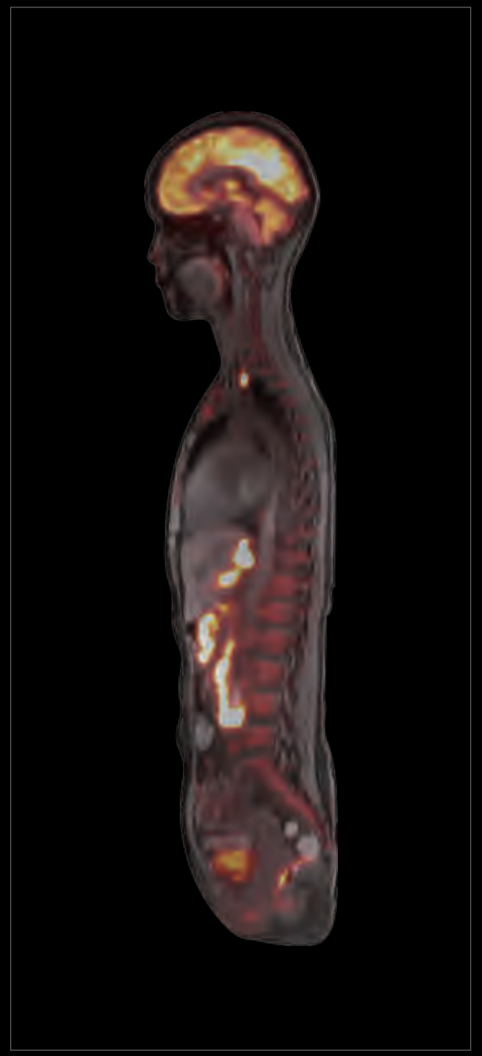
T1W



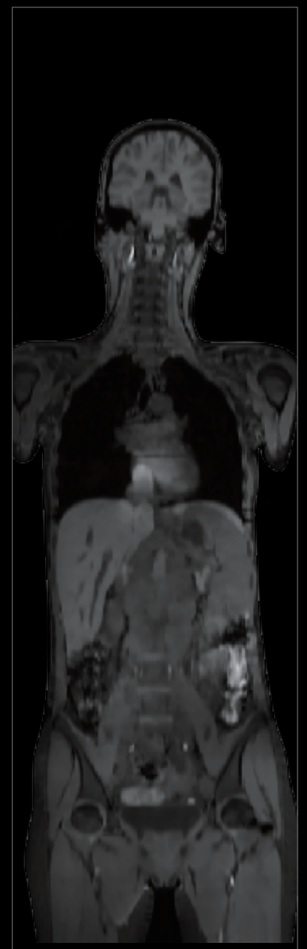
PET



Fusion

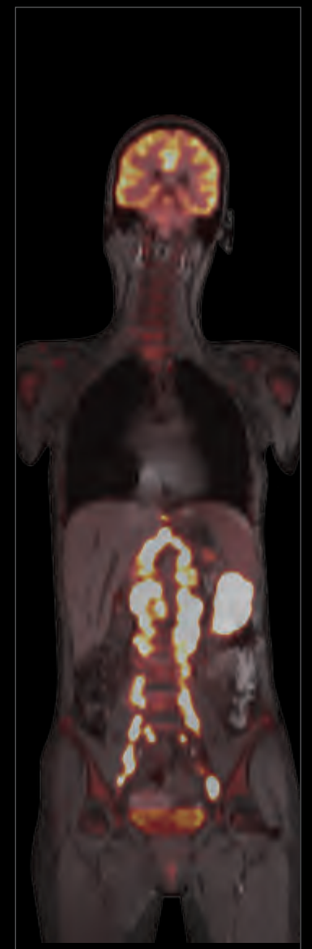


Fusion WB



T1W WB

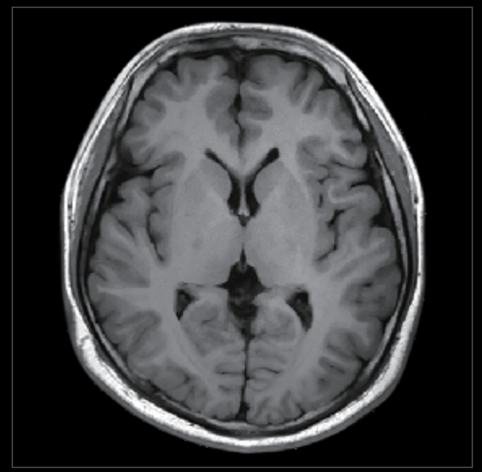
PET WB



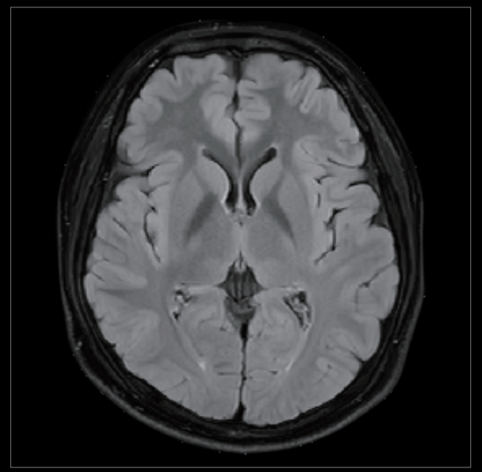
Fusion WB

Neuro

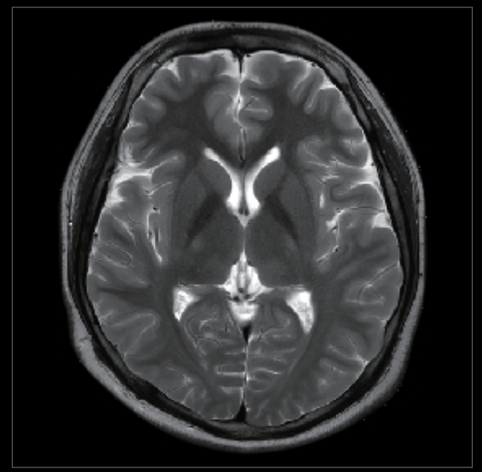
174cm, 77kg, 8.86mCi, 18F-FDG.



T1W FSE TRA FLAIR



T2W FSE FLAIR TRA FS



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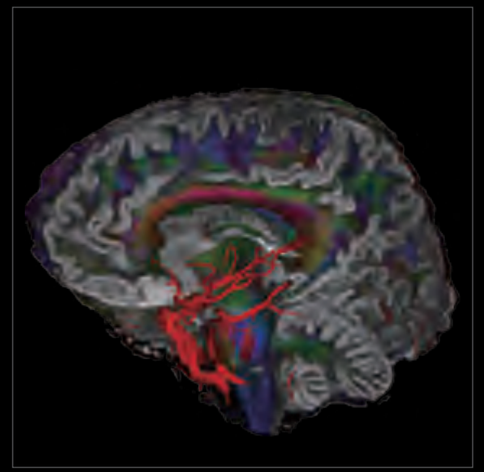
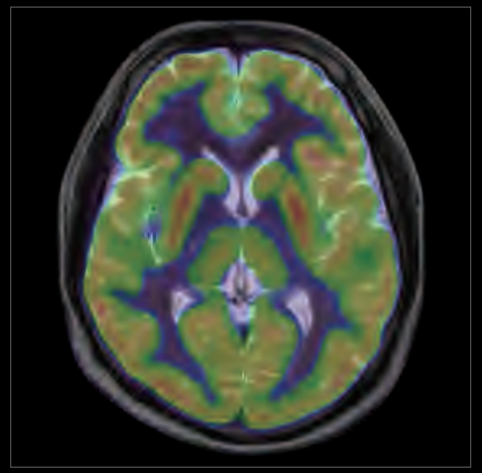


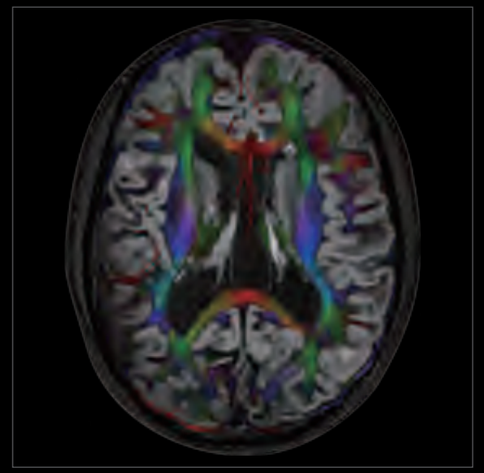
Fusion

TOF MRA



Fusion

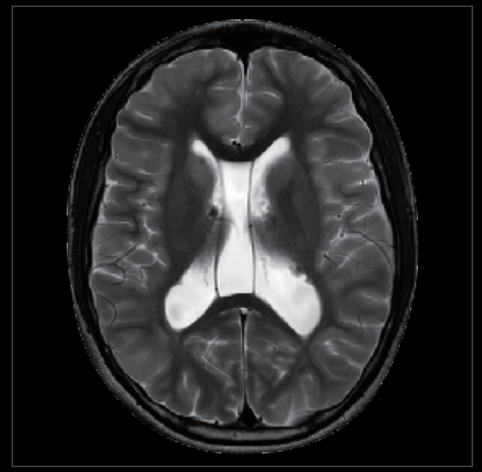
PET



Fusion

Neuro

169cm, 56kg, 7.855mCi, 18F-FDG, tuberous sclerosis.



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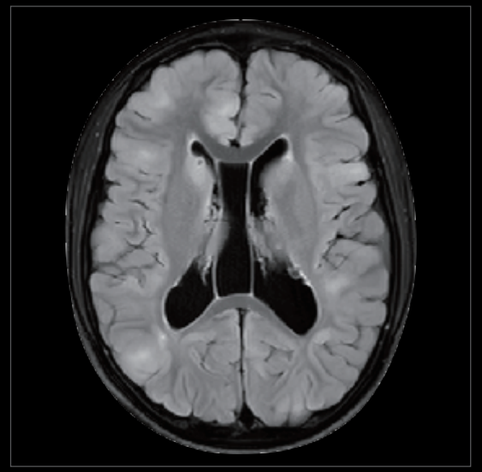

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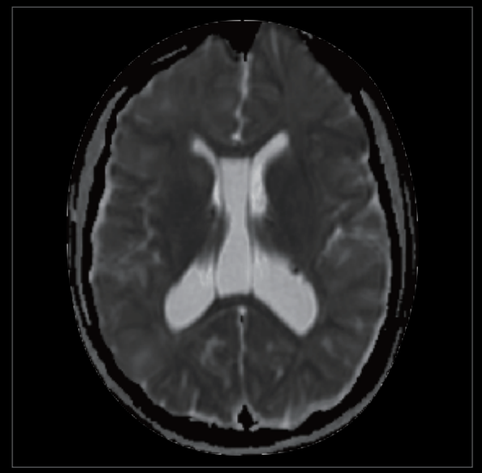
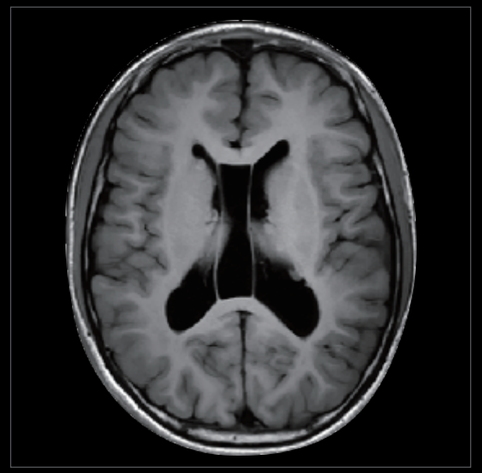


ADC



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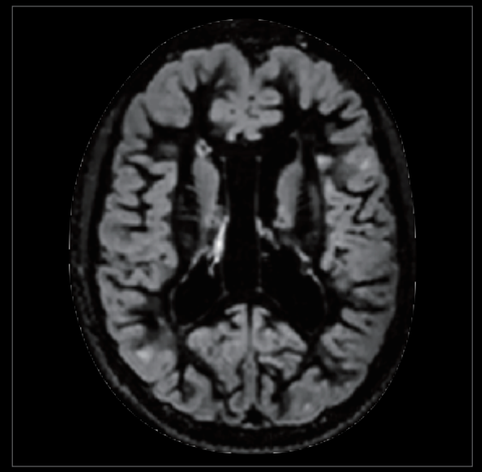

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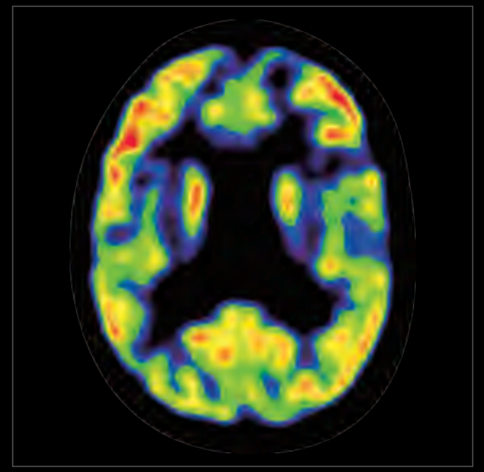
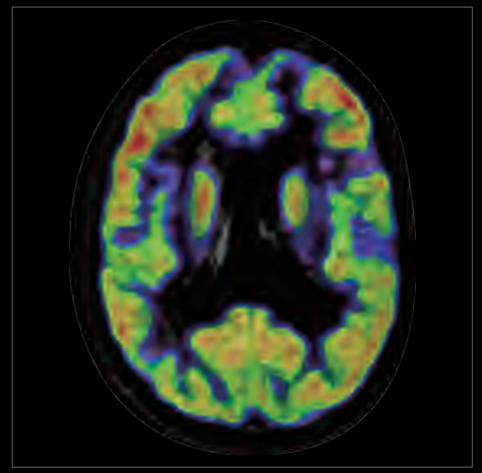
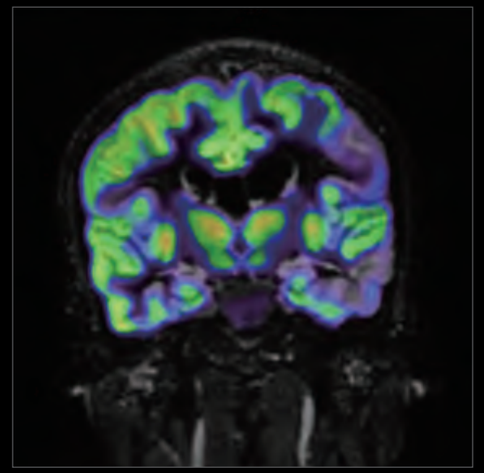


PET



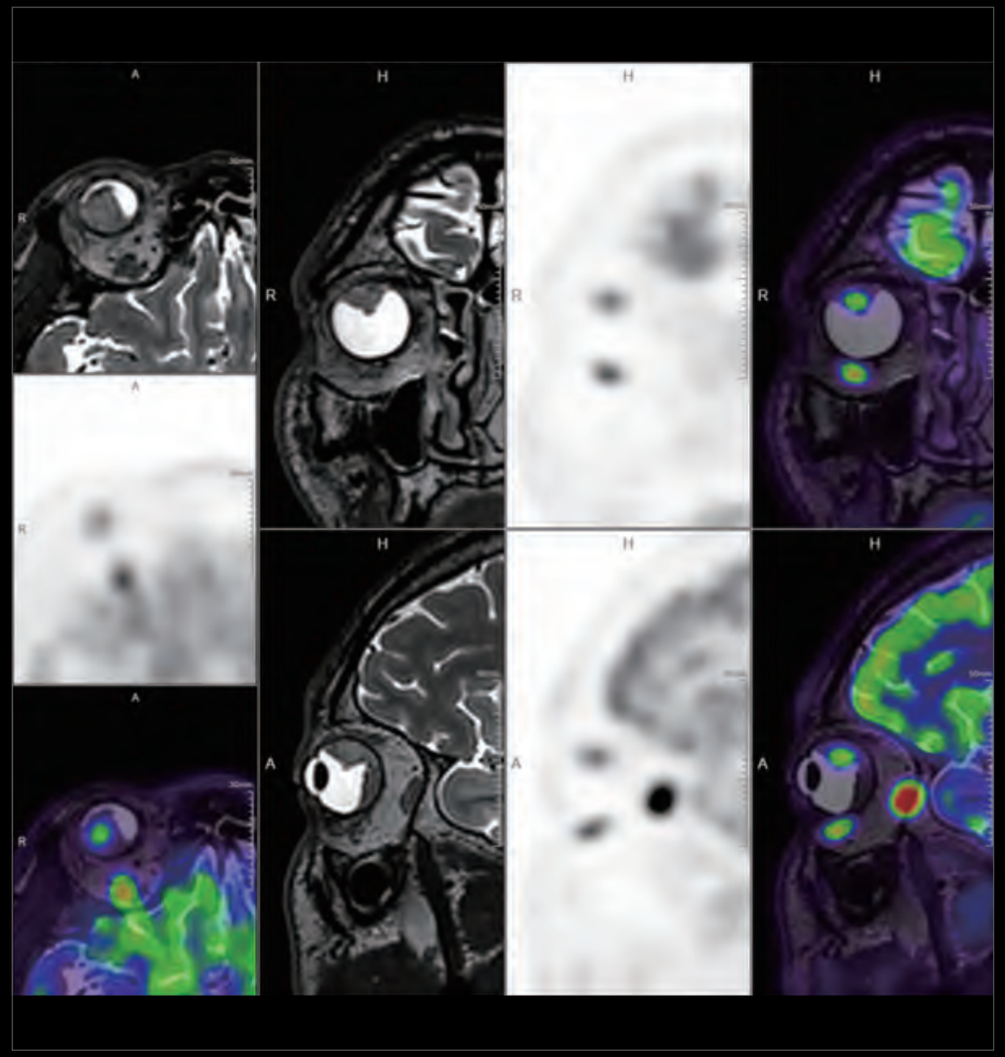
Fusion



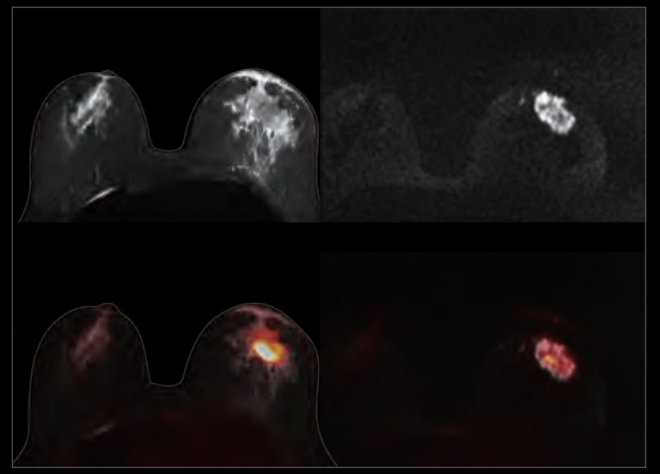
Fusion

Tumor

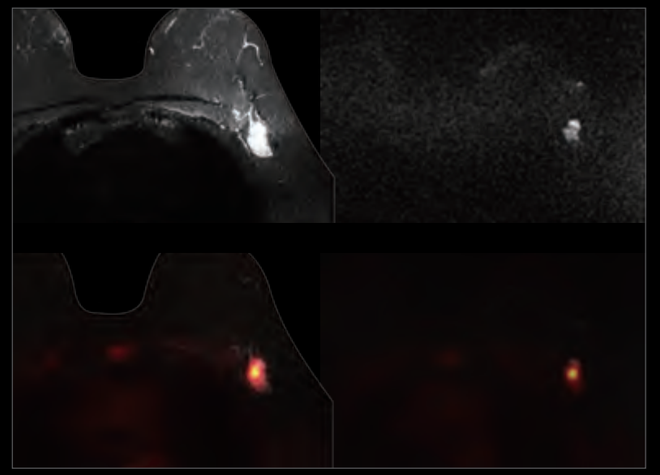
168cm, 62kg, 10.882mCi, 18F-FDG, intraocular lesion.



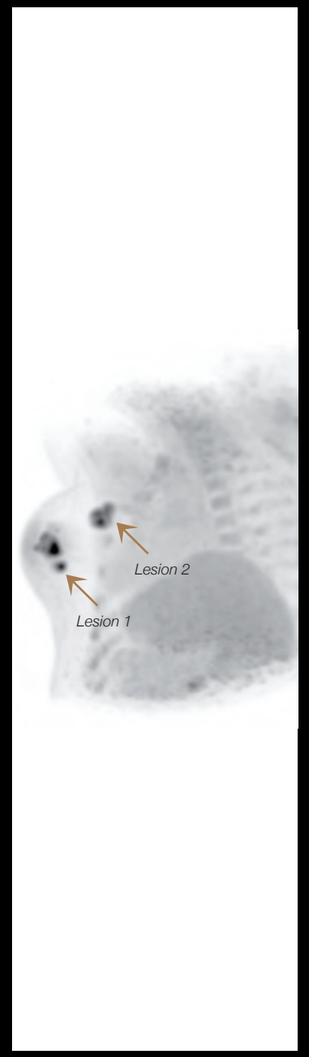
162cm, 72kg, 7.85mCi, 18F-FDG, breast cancer.



Lesion 1

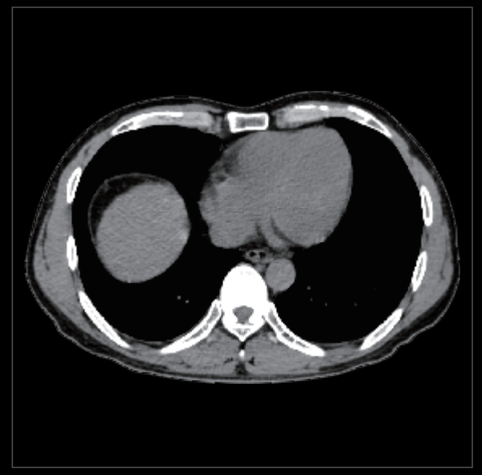


Lesion 2



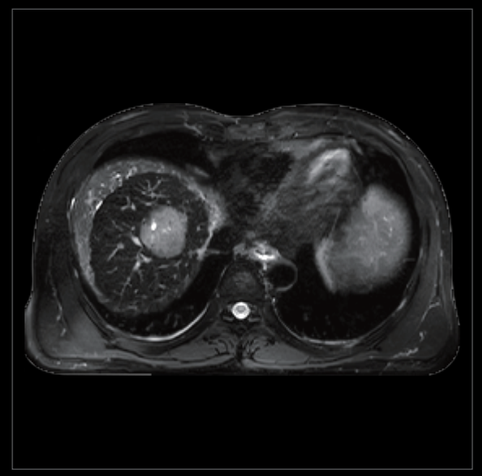
Tumor

171cm, 73.8kg, 9.84mCi, 18F-FDG,
hepatic malignant tumor. PET/MR could display more clearly of soft tissue mass than PET/CT.

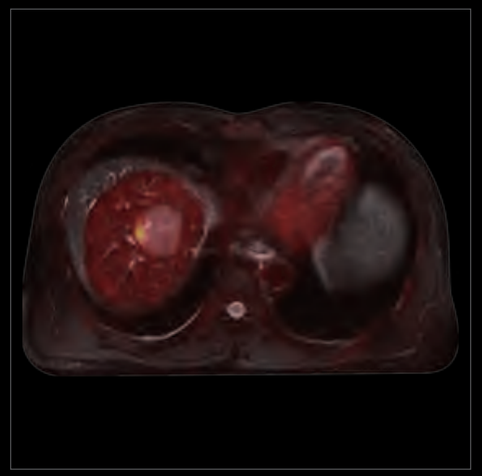


CT

PET/CT Fusion

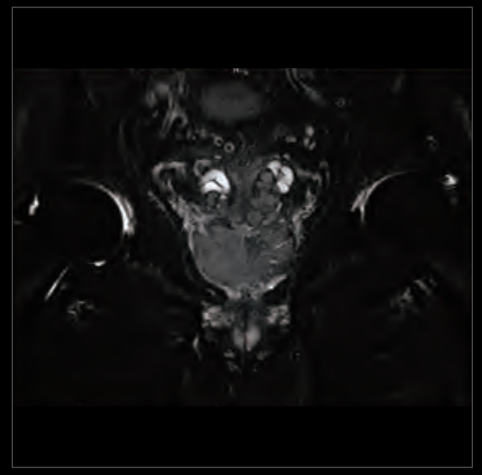


T2W FSE TRA SPAIR

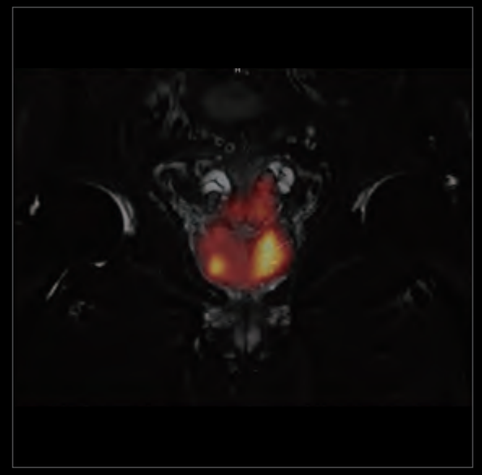


PET/MR Fusion

165cm, 64.7kg, 2.71mCi, 68Ga-PSMA, prostate cancer.



T2W FSE COR



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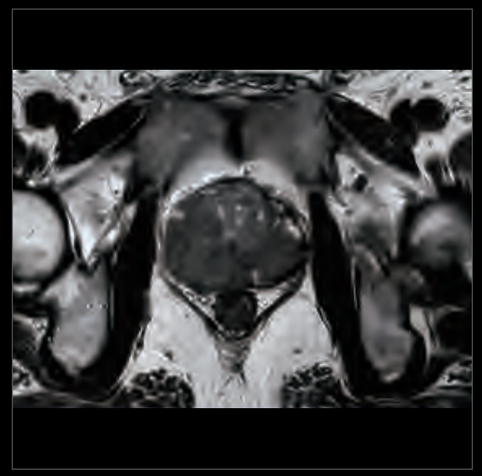

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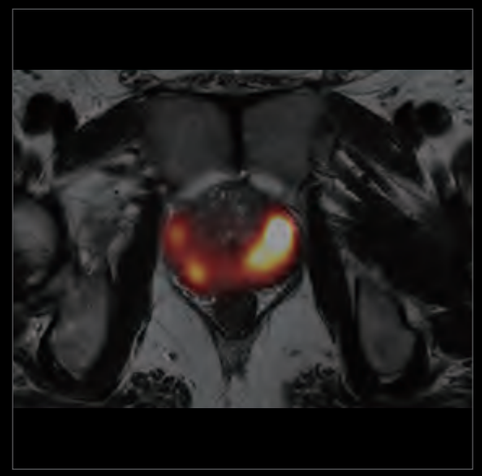
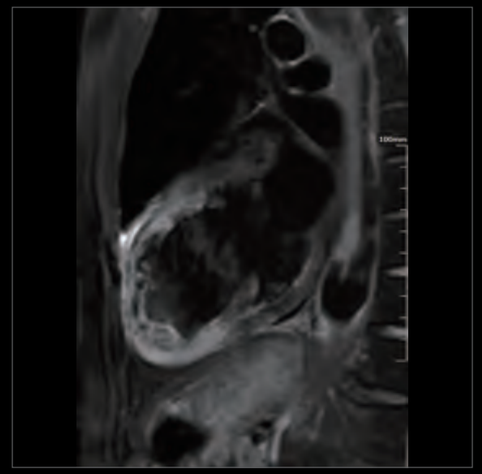


Fusion

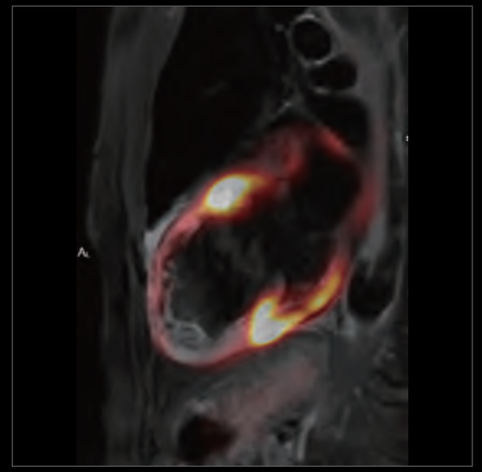
Cardiac

172cm, 60kg, 8.237mCi, 18F-FDG, takotsubo cardiomyopthy.



T2W FSE DB

PET



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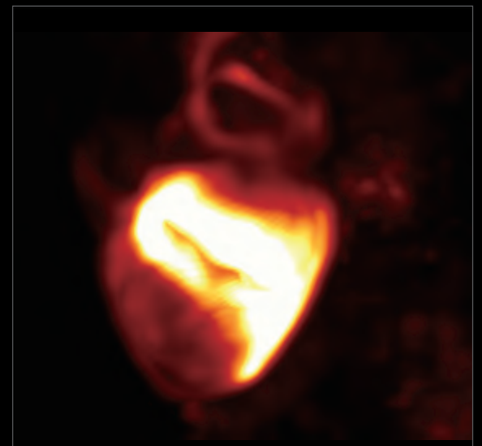
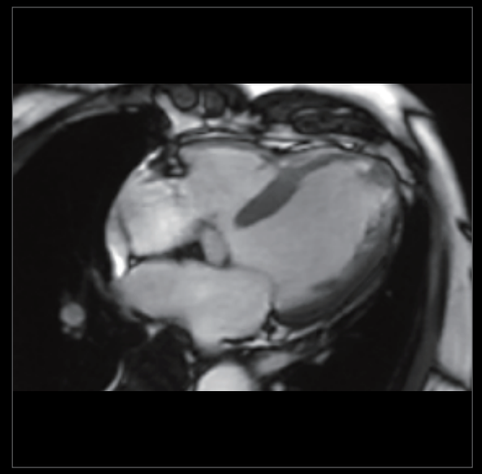
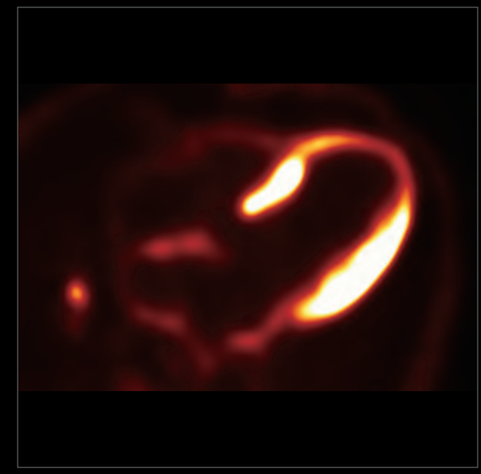


MIP



BSSFP CINE



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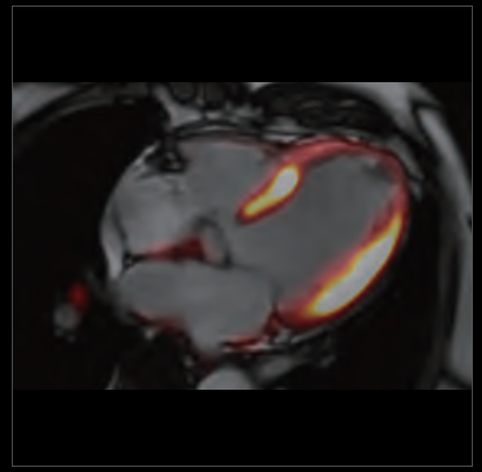

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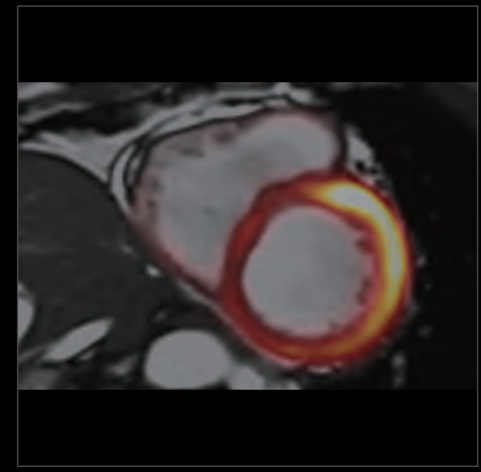
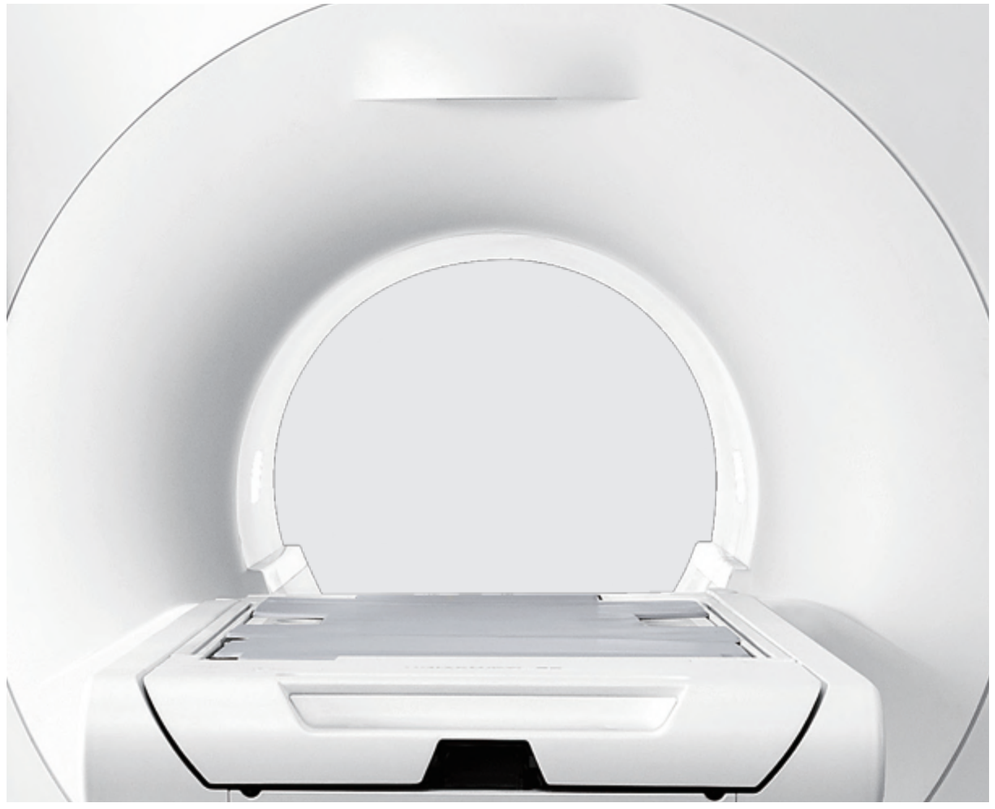


Fusion

Human-Centered Design

Focusing on user experience, uPMR 790 combines precise operation with a lightweight and artistic design. We bring aesthetic enjoyment and ease of use to the technology, delivering care, trust and respect through our design.



Pleasing Aesthetics

Our design scheme integrates oriental aesthetics with minimalism, presenting a seamless fusion of traditional and modern styling.

User-Friendly Design

The product design delivers comfort, safety, efficiency and ease-of-use. By applying ergonomic principles the uPMR 790 combines innovative design with optimal functionality in order to provide the best possible user experience, optimizing patient comfort during the examination.

Sophisticated Craftsmanship

Driven by the tenets of precision design, we fine-tune every technological detail to embody the spirit of craftsmanship in every product.