Canon

Vantage Galan 3T

Supreme Edition

Advanced Intelligence, Supreme Productivity

Advanced Intelligence, Supreme Productivity

Vantage Galan 3T / Supreme Edition delivers optimized MRI performance with the integration of advanced system components and intelligent imaging technologies.
Powered by Altivity, sharp, denoised images are combined with a range of accelerated scanning techniques to produce enhanced diagnostic capability.
And with reimagined workflow solutions, many processes are now automated to help you move seamlessly through your day.
Vantage Galan 3T delivers superb MR performance every day for exceptional patient and staff experience.

Vantage Galan 3T

Supreme Edition

Enhance MRI performance with Real-time Platform

Real-time Platform obtains, processes and delivers ever-changing information in real time, raising MR performance to a new level.
It optimizes the entire system to meet modern imaging needs, MRI procedures run smoother enhancing every exam, every day.

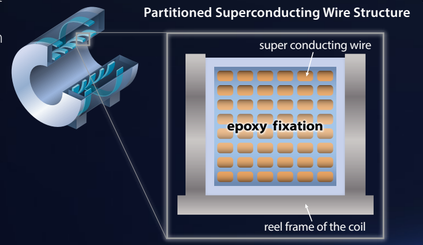
Boost performance with evolved system integration

Along with a new Real-time Platform, key system components such as the magnet and gradient coil have been fully optimized to produce outstanding real time MR imaging performance.

Enhanced system stability with

High-quality magnet manufactured in Japan

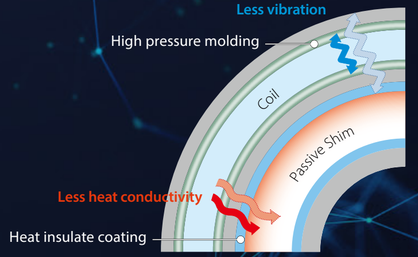
The first made-in-Japan 3T magnet stabilizes the system itself and enhances its reliability with its high manufacturing quality and unique Partitioned Superconducting Wire Structure. This also expands FOV while maintaining a high magnetic field homogeneity, allowing more information to be obtained in a single scan while stabilizing the image.



High efficiency performance with

Cross-pattern Supported Gradient Coil

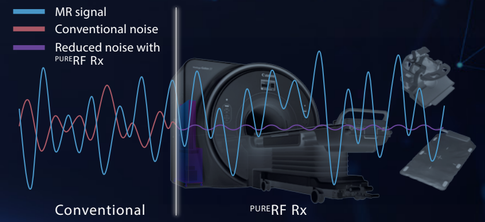
Refined gradient coil technology optimizes consistent image quality through increased gradient stability and precise center frequency control. This enhances cooling efficiency and suppresses vibration and acoustic noise during the examination.



Consistent image quality with

Integrated RF technology

PURERF Rx suppresses the noise from the system when receiving MR signals. Integrated RF performance helps to ensure robust image quality across all sequences.



Robust & Stable IQ

Real-time reception and feedback of ever-changing information can enhance image stability and robustness.

High-speed processing

Realizing rapid communication between each component, results are provided faster than ever.

Total optimization with
Real-time Platform

State-of-the-art platform that provides stable system performance with high-speed processing by the advanced Real Time Manager.

Connected Serviceability

Systems can be operated at all times in optimal condition with constant feedback.

Future Scalability

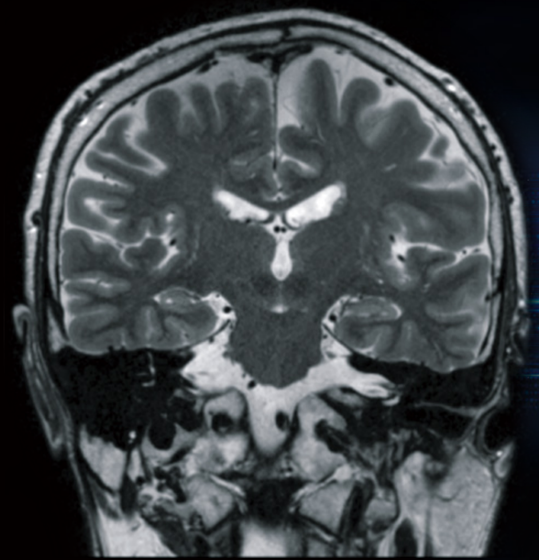
Real Time Manager controls the entire system and enables scalability to meet future functional requirements.

Precise IQ Engine (PIQE)

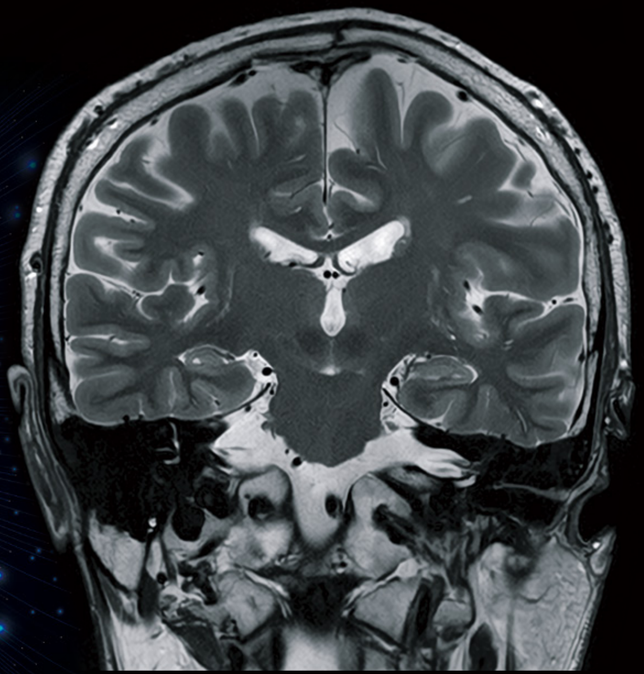
Precise IQ Engine (PIQE) is Canon Medical Systems' high resolution Deep Learning Reconstruction for MRI.
PIQE increases matrix size and pixel count, removes noise, and delivers sharp anatomical images to take MR imaging to the next level.

Slice thickness
2 mm

Acquisition Matrix
320×320



High Resolution
while maintaining SNR



PIQE

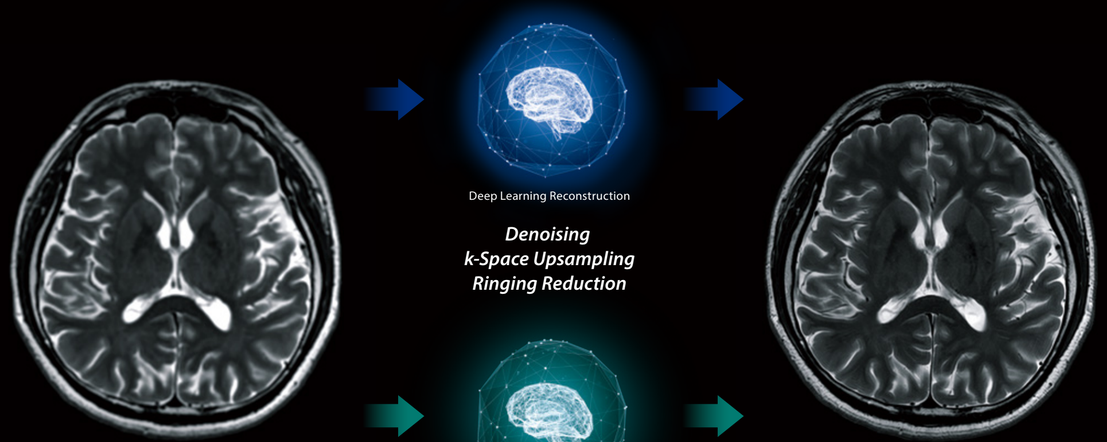
Slice thickness
2 mm

Reconstruction Matrix
960×960

Volunteer

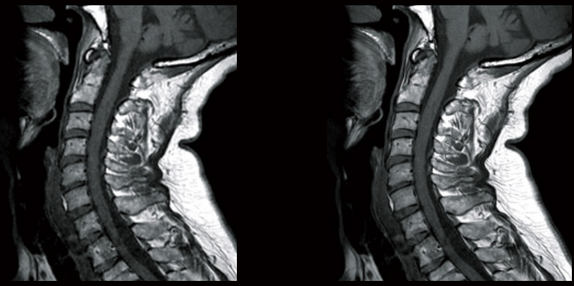
Superior reconstruction technology delivers simple, clear and precise imaging

PIQE delivers three key benefits; denoising, k-space upsampling and ringing reduction by utilizing two types of Neural Networks. The result is high-quality images achieved even with short scan times.



Volunteer

Even with shortened scan times PIQE delivers results with clinically valuable image quality.



Conventional

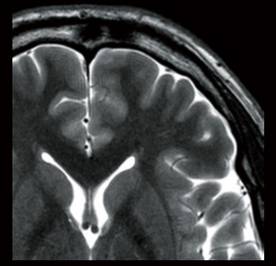
Acquisition Matrix 288×288
Sagittal T1w, 1:28

PIQE

Reconstruction Matrix 864×864
Sagittal T1w, 1:28

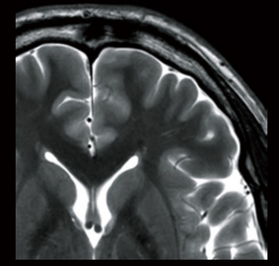
Courtesy of Rothschild Hospital, France

PIQE can also reduce ringing artifact simplifying diagnosis with more precise imaging.



Conventional

Acquisition Matrix 288×288
Axial T2w, 2:42



PIQE

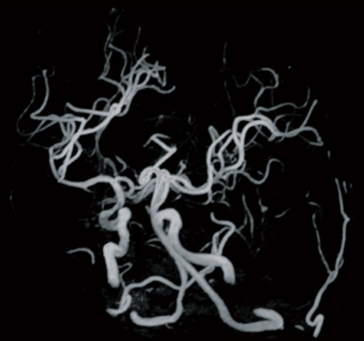
Reconstruction Matrix 864×864
Axial T2w, 2:42

Volunteer

Integration of broad technologies and Deep Learning Reconstruction boosts imaging capability

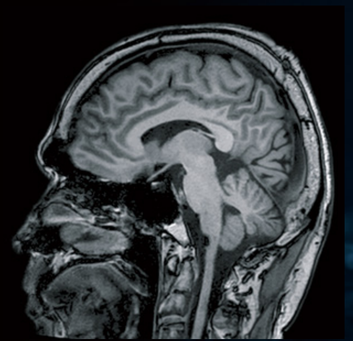
AiCE intelligently removes noise from images which results in higher SNR and enables increased resolution, as well as faster scan time when used in combination with unique accelerated scan applications.

Fast 3D mode + AiCE



1:09
3D TOF, 0.5×0.5 mm resolution, 1 mm, MIP

Compressed SPEEDER + AiCE

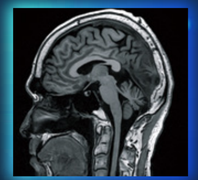
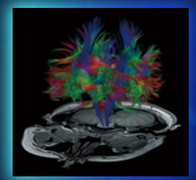
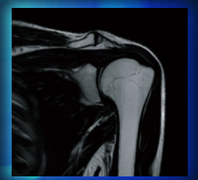
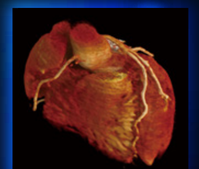


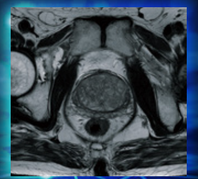
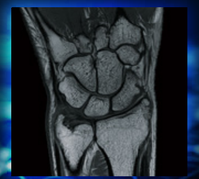
2:48
Sagittal 3D T1w MPRAGE, 0.74×0.74 mm resolution, 0.8 mm, Compressed SPEEDER 4.0×1.5

Volunteer

AiCE is applicable to a broad range of anatomies, contrast and applications, providing higher levels of imaging in every situation.

All Contrast × Almost all Sequences × Any Parameter × All Body regions × All RF coils

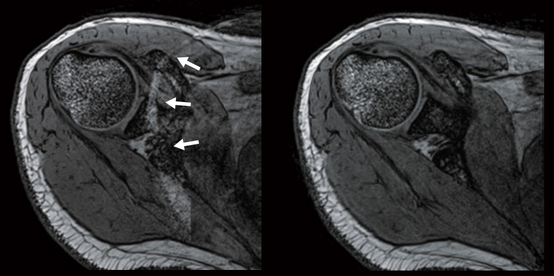
powered by Altivity

Minimizing image artifacts to enhance diagnostic capability

Exsper

Exsper is a robust parallel imaging technique that provides accelerated scans. Designed to suppress unfolding errors even in small FOV images, delivering exceptional imaging performance with its highly reliable and fast scanning technology. Exsper can be combined efficiently with other applications such as AiCE.

SPEEDER | **Exsper**

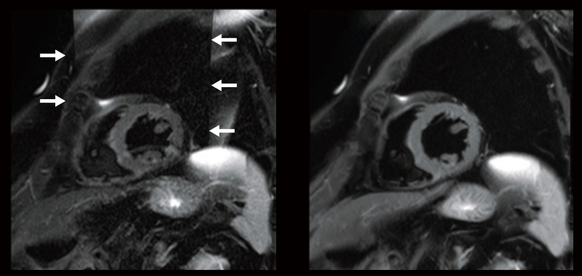


Small FOV 150 mm

Axial FE3D T2*, 0.48×0.48 mm resolution, 1 mm, SPEEDER 2×1

Axial FE3D T2*, 0.48×0.48 mm resolution, 1 mm, Exsper 2×1

SPEEDER | **Exsper**



Small FOV 220 mm

SA BB FS T2w, 1.1×1.1 mm resolution, 8 mm, SPEEDER 2×1

SA BB FS T2w, 1.1×1.1 mm resolution, 8 mm, Exsper 2×1

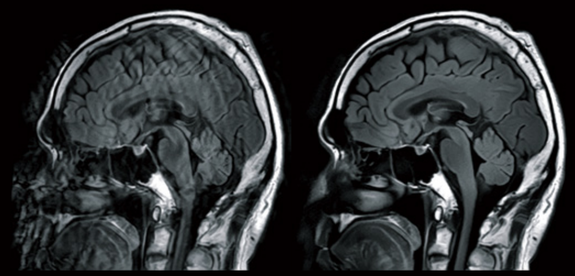
Volunteer

powered by **Altivity**

Iterative Motion Correction (IMC)

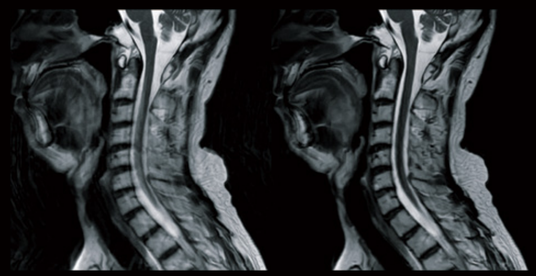
IMC is a motion correction technology for reducing motion artifacts caused by sporadic movements. Powered by Altivity, IMC utilizes Deep Learning based methods for motion correction in addition to traditional model-based correction.

Conventional | **IMC**



Sagittal FLAIR, 0.78×0.78 mm resolution, 4 mm, 3:51

Conventional | **IMC**



Sagittal T2w, 0.78×0.78 mm resolution, 3 mm, 2:38

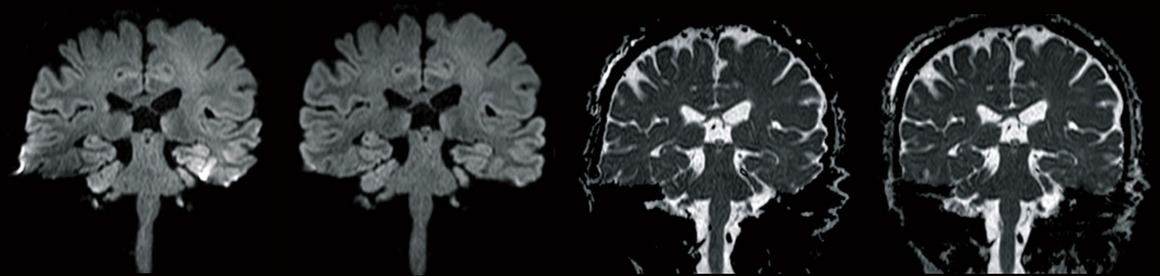
Volunteer

Advanced Diffusion Weighted Imaging with less distortion enabled by highly efficient gradient magnetic field

RDC DWI

RDC DWI (Reverse encoding Distortion Correction DWI) is intended to reduce distortion in phase encoding direction due to B0 field inhomogeneity, or eddy current, in DWI sequence.

Conventional **RDC DWI** **Conventional** **RDC DWI**



DWI / b1000 ADC map

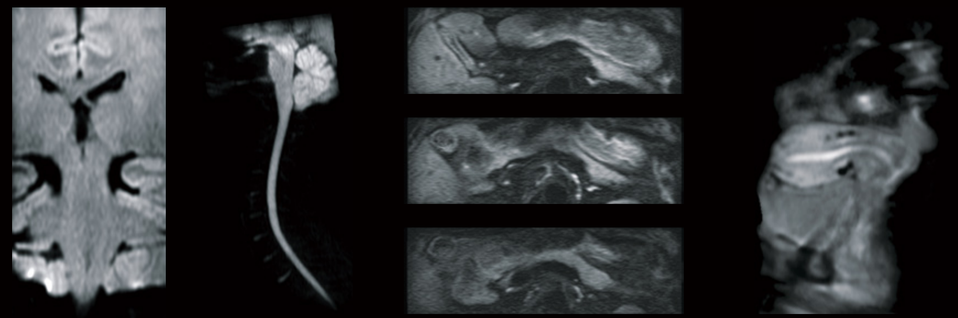
Coronal DWI b1000, 1.0×1.0 mm resolution, 2 mm

Volunteer

Zoom DWI

Diffusion weighted image with small FOV can be acquired suppressing distortion and unfolding errors, diagnostic reliability is expanded.

Brain **C-Spine** **Pancreas** **Uterus**



Coronal DWI b1000,
0.74×0.74 mm resolution,
2 mm, 5:28

Sagittal DWI b800,
0.9×0.9 mm resolution,
4 mm, 5:28

Axial DWI b800,
0.8×0.8 mm resolution,
3 mm, 4:27

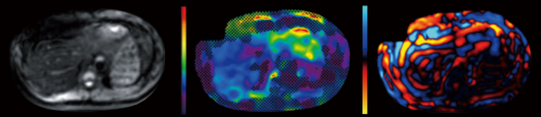
Sagittal DWI b800,
0.68×0.68 mm resolution,
3.5 mm, 5:08

Volunteer

Quantifiable imaging expands the possibility of MR imaging

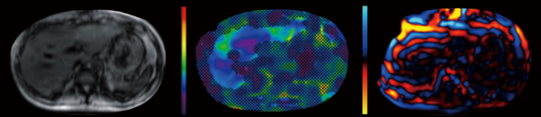
MR Elastography (MRE)

MRE is the only MRI technology that has been validated for staging liver fibrosis. The role of MRE has been increasingly recognized in multidisciplinary clinical guidelines for noninvasive liver fibrosis assessment, particularly in suspected cases of non-alcoholic fatty liver disease (NAFLD).



Magnitude image | Stiffness map | Wave images

SE-EPI scan time 0:11



Magnitude image | Stiffness map | Wave images

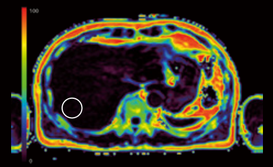
FE2D scan time 0:13×4 slices

Volunteer

Non-invasive fat imaging and quantification

Imaging is rapidly becoming the standard for fat quantification. Canon's fat imaging and quantification can simultaneously, in a single breath hold exam, provide quantitative maps of the liver to measure proton density fat fraction (PDFF) and R2*.

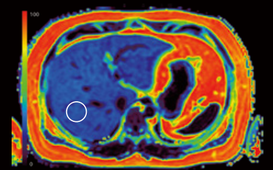
Normal



Fat Fraction 1.4 %

Axial FE3D, 2.7×2.8 mm resolution, 6 mm, 0:19

Obesity



Fat Fraction 26.6 %

Axial FE3D, 3.1×3.1 mm resolution, 6 mm, 0:21

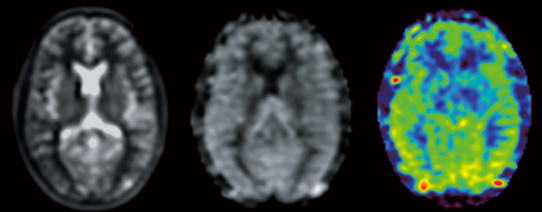
Volunteer

pseudo-Continuous Arterial Spin Labeling (pCASL)

Arterial Spin Labeling (ASL) MRI provides non-invasive methods to measure tissue perfusion without the use of external contrast agents. pCASL utilizes a fast spin echo (FSE) readout which makes it less sensitive to susceptibility artifacts and provides better image quality than other solutions.

Volunteer images

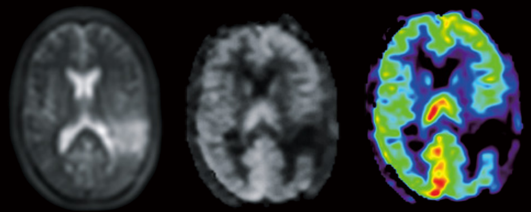
Label image | Perfusion weighted | Cerebral Blood Flow



Axial pCASL, 2.0×2.0 mm resolution, 6 mm, TI 1800 ms, 4:33

Post surgery follow-up of a patient with a left parietal glioblastoma

Label image | Perfusion weighted | Cerebral Blood Flow



Axial pCASL, 2.0×2.0 mm resolution, 6 mm, TI 2000 ms, 4:47

Courtesy of GHU Sainte Anne, Paris, France

High-quality imaging by anyone, anytime with Auto Consult

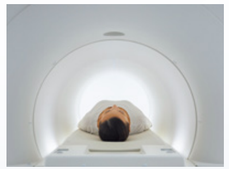
By automating steps in the diagnostic pathway, Auto Consult minimizes interaction with the scanner to allow ultimate focus on the patient.

Auto Populate

Previous scan parameters are easily retrieved and populated for returning patients.

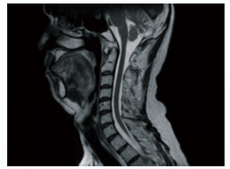
Auto Start

Scanning is automatically started when the scan room has shielded.



Robust Imaging

Noise free, robust imaging solutions such as motion correction and high-resolution imaging are reproducible and operator-independent.



Setup

Localizer

Scan

Protocol Setting

Image Check

End Exam

powered by Altivity

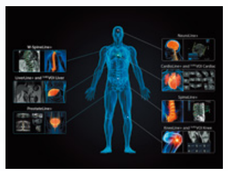
Auto Position

Patient is automatically moved to the iso-center utilizing position detection from the Ceiling Camera.

powered by Altivity

Auto Planning

Boosted by artificial Intelligence, Auto Scan Assist reduces unnecessary steps and enhances consistent operation.



* SURE VOI Cardiac is model-based algorithm.

Operate the MRI examination from anywhere with Tablet UX

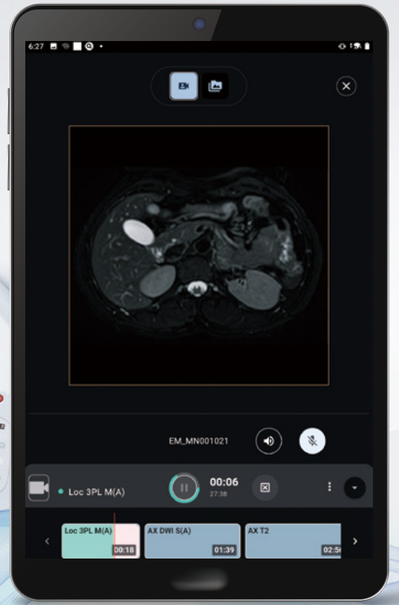
With the mobile Tablet UX, automated workflow from the patient first arrival to the final reports can be monitored and controlled from anywhere. Two-way patient communication can be maintained remotely from the MR Console, enabling safe and efficient MR exams for patients, operators, and facilities.

Advance preparation for the exam

Patient information and examination type can be confirmed and assigned before entering the scan room.

Protocol, coil and position selection

Based on the patient information, you can set the examination remotely in advance. Quickly and easily set-up the patient exam by pre-populating coil and scan protocol settings.



Remote scan monitoring

Confirm exam completion and preview the results to verify image quality. Acquisition can be started, paused and finished from any location.

Start preparing the next patient

All done

Remote communication with your patients

Operators can monitor the patients' condition and communicate remotely with the patient in the scan room, providing a safe and reliable procedure.

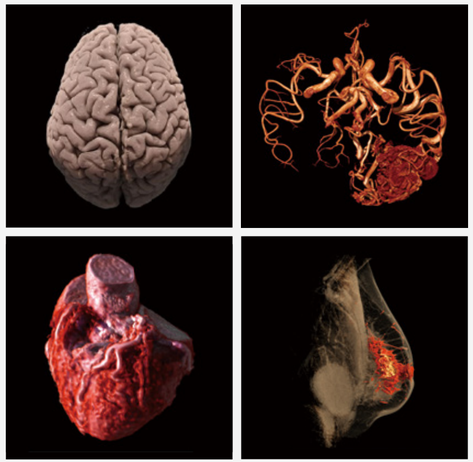
Collaboration of cutting-edge technology and high-definition images expand possibilities in MR imaging

Advanced visualization system provides comprehensive applications in a variety of IT environments for the latest MR clinical solution.

Intelligent advanced post processing offers innovative diagnostic solutions

Global Illumination

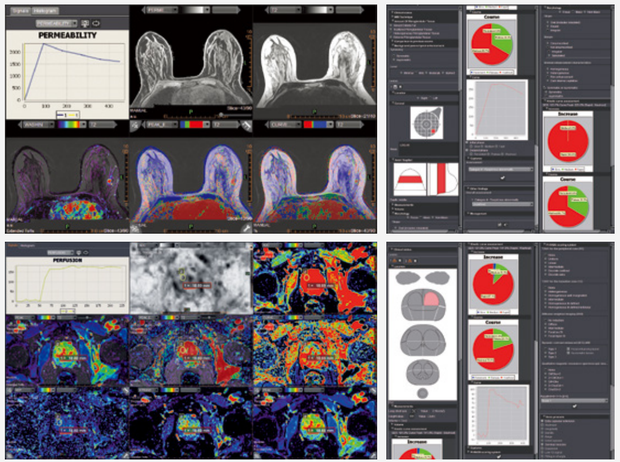
Global Illumination is an innovative 3D / 4D rendering technique to help providing more photorealistic view of human anatomy.



*Some of the applications in Vitrea is provided by Olea Medical.

Dedicated automatic reporting

With automatic reporting of results, efficient exam communication can be achieved.



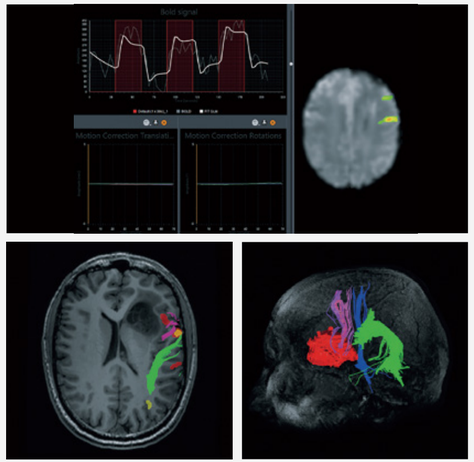
*Some of the applications in Vitrea is provided by Olea Medical.

Vitrea

Aid your diagnosis with dynamic visualization

Functional MRI (fMRI)

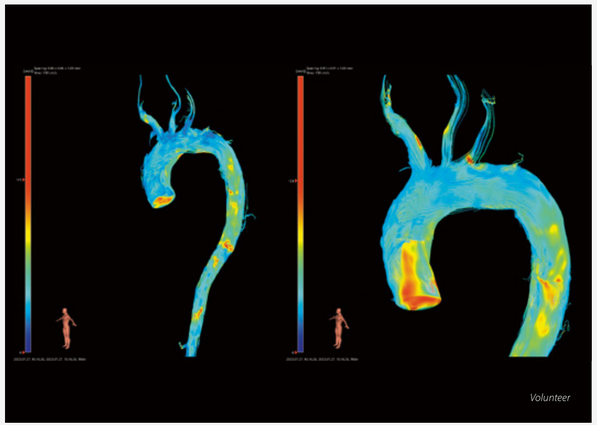
With fMRI application, seamless and intuitive brain mapping enhances your assessment and surgical planning.



*Some of the applications in Vitrea is provided by Olea Medical.

4D Flow imaging

4D flow MRI offers the ability to measure and to visualize the temporal evolution of complex blood flow patterns within an acquired 3D volume.



Extended imaging range Improvement of Recon matrix with PIQE

*For 4D Flow imaging, analysis software is required. This image is using the software provided by Pie Medical Imaging.

Deliver a quieter, more comfortable MR exam with Vantage Galan 3T's patient-centered design

A successful exam begins with a comfortable patient. Vantage Galan 3T is designed to maximize patient comfort without compromising image quality. Vantage Galan 3T's 71 cm wide bore and short magnet creates an open feeling. Combined with Canon's uniquely quiet Pianissimo, Pianissimo Zen, and mUTE[1] 4D MRA technology, and you have the most patient friendly MR system available today.

1 mUTE : minimized acoustic noise utilizing UTE

Quiet exams with Pianissimo and Pianissimo Zen

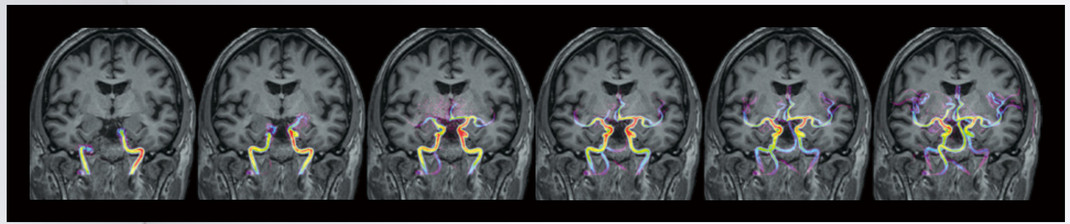
Pianissimo technology significantly reduces the noise in and around the MRI environment for every patient, every sequence, every time thanks to the vacuum chamber encasing the super slim gradient coil which suppresses acoustic noise. And Pianissimo Zen's quiet sequences further reduce noise by up to 99%, making exams even more comfortable and easier to complete.

2 Depending on the condition of usage and examination.

Up To **99%**[2] Noise Reduction

Silently capturing hemodynamics with mUTE 4D MRA

Vantage Galan 3T's UTE sequences allow for less dephasing and more homogeneous vessel signals. At the same time, the use of multiple inversion times (TIs) allows the generation of dynamic images (4D) visualizing the blood flow without the need for contrast agents.



Volunteer

Make a smart investment choice with Vantage Galan 3T

Every inch on Vantage Galan 3T has been considered for efficient use of space while minimizing energy consumption. The system's zero boil-off magnet can often fit into the same space as a 1.5T system, while simultaneously providing a comfortable, open environment for your patients.

Minimize energy use in a compact space

Vantage Galan 3T's power-saving ECO Mode is automatically triggered when you lower the patient couch to help you minimize your running costs. At only 70 kVA[3] Vantage Galan 3T has one of the lowest rated power requirement in its class.

3 For conventional gradient, 90 kVA is required.

ECO Mode

Power Requirement

Save space

Small size, big performance. The system's short and compact bore minimizes patient anxiety and at the same time allows a 3T scanner to be installed in a room originally designed to hold a 1.5T system.
The streamlined eco-friendly cabinet construction allows flexibility of the facility design. This leads to saving space and simple installation.

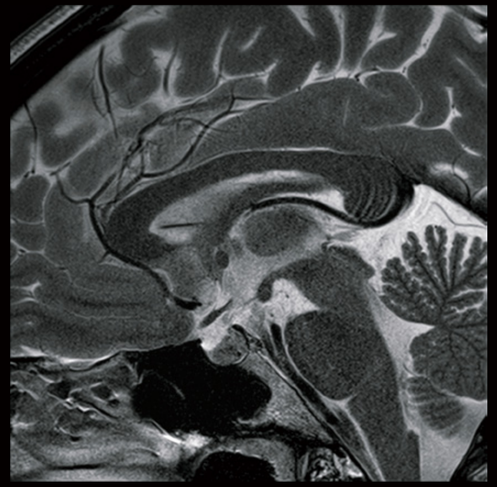
Total Installation Space[4]

Scan Room Space

4 The 5 Gauss line is not confined within the scan room. Controlled access area should be taken into account by the facility when preparing for installation. The above specifications may not meet the local requirements such as for access as is required by the Americans with Disabilities Act in the United States. Please consult with your architectural and/or electric consultant for coding requirements. Some power equipment may be required to be placed in a dedicated electrical room.

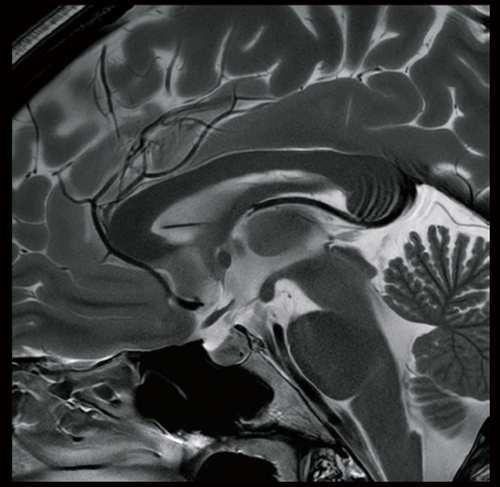
PIQE for Pituitary | Higher definition

Conventional



Sagittal T2w, Acquisition matrix 336×336,
0.34×0.34 mm resolution, 2.2 mm, 3:18

PIQE

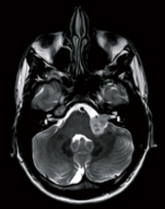


Sagittal T2w, Reconstruction matrix 1008×1008,
0.22×0.22 mm resolution, 2.2 mm, 3:18

Courtesy of Hospital Foundation Adolphe De Rothschild, France

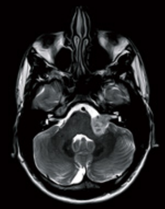
PIQE for Brain | Faster & higher definition

Conventional

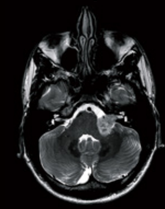


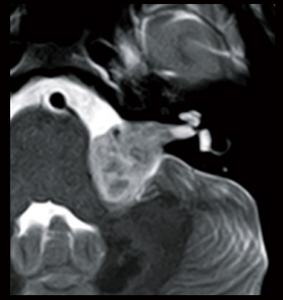
52%
Scan time
Reduction

Conventional

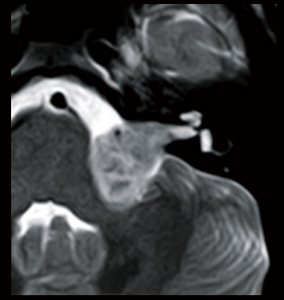


PIQE

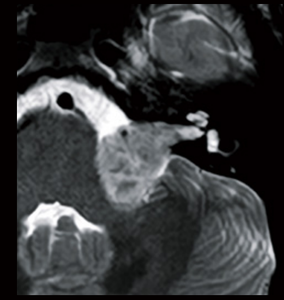




Axial T2w, Acquisition matrix 384×384,
0.58×0.58 mm resolution, 4 mm, 2:42



Axial T2w, Acquisition matrix 320×320,
0.7×0.7 mm resolution, 4 mm, 1:18

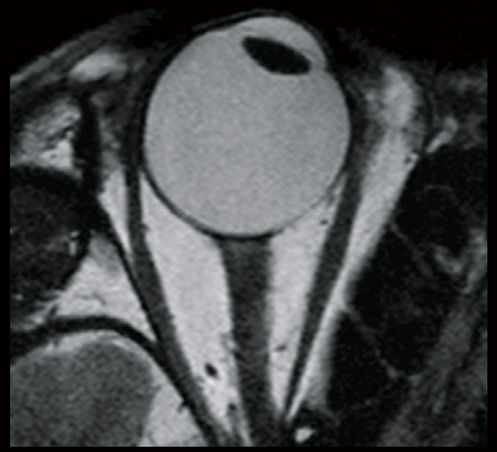


Axial T2w, Reconstruction matrix 960×960,
0.46×0.46 mm resolution, 4 mm, 1:18

Courtesy of Hospital Foundation Adolphe De Rothschild, France

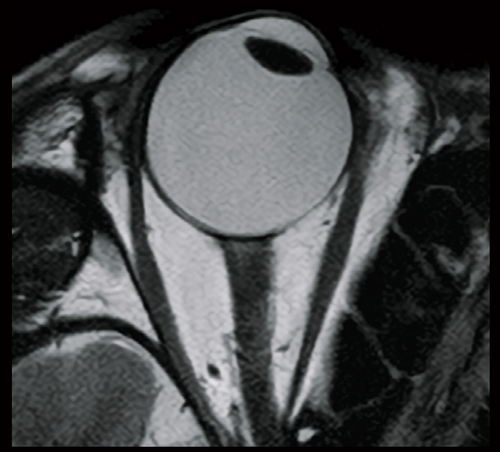
PIQE for Orbit | Faster & higher definition

Conventional



Axial T2w, Acquisition matrix 224×224,
0.34×0.34 mm resolution, 3 mm, 0:36

PIQE



Axial T2w, Reconstruction matrix 672×672,
0.22×0.22 mm resolution, 3 mm, 0:36

Volunteer

PIQE for C-Spine | Higher definition

Disk herniation

Conventional

Sagittal T2w WFS in phase,
Acquisition matrix 240×288,
0.82×0.82 mm resolution, 3 mm, 2:40

PIQE

Sagittal T2w WFS in phase,
Reconstruction matrix 720×864,
0.54×0.54 mm resolution, 3 mm, 2:40

Conventional

Sagittal T2w WFS Water image,
Acquisition matrix 240×288,
0.82×0.82 mm resolution, 3 mm, 2:40

PIQE

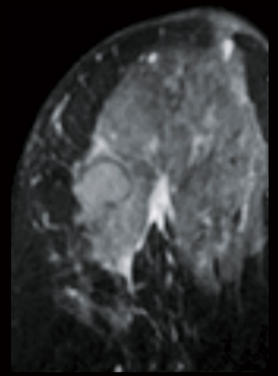
Sagittal T2w WFS Water image,
Reconstruction matrix 720×864,
0.54×0.54 mm resolution, 3 mm, 2:40

Courtesy of Hospital Foundation Adolphe De Rothschild, France

PIQE for Breast | Higher definition

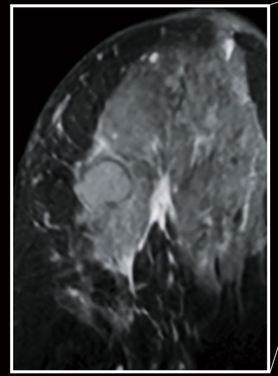
Right CD area breast tumor

Conventional

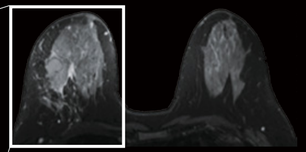


Acquisition matrix 352×256

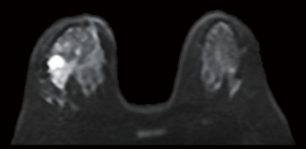
PIQE



Reconstruction matrix 1056×774



Axial T2w Fs,
1.0×1.0 mm resolution, 3 mm, 2:10



Axial DWI b 1000,
Reconstruction matrix 384×672
1.6×3.1 mm resolution, 3 mm, 4:14

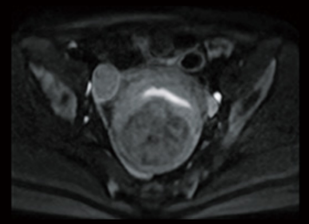
Courtesy of Fujita Health University Hospital

PIQE for Uterus | Higher definition

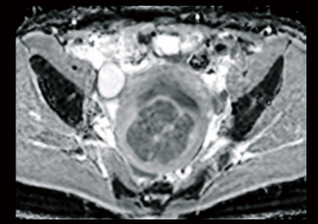
Suspected uterine fibroid

with RDC DWI

Axial DWI b 1000,
Reconstruction matrix 432×432,
1.9×1.7 mm resolution, 5 mm, 2:04

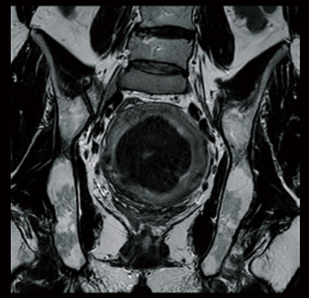


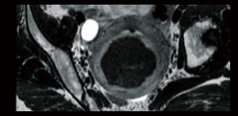
DWI / b 1000



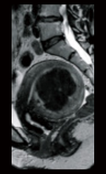
ADC map

Coronal T2w,
Reconstruction matrix 864×864,
1.2×0.8 mm resolution, 1.5 mm, 4:40





Axial (MPR)

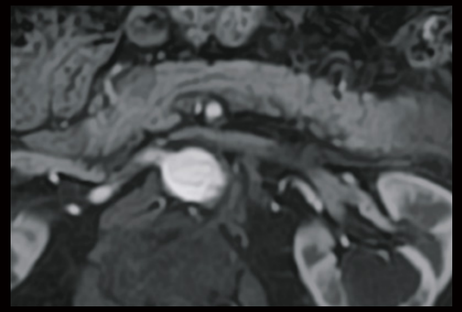


Sagittal (MPR)

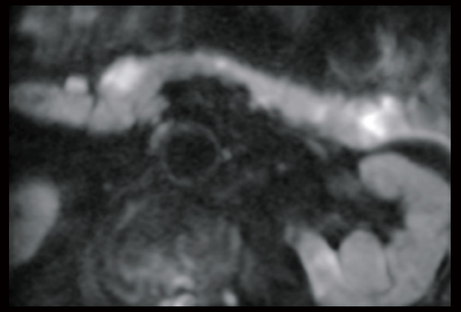
Courtesy of Minoh City Hospital

PIQE for Pancreas | Higher definition

Pancreatic tumor



Axial T1w 3D Dynamic,
Reconstruction matrix 376×512,
1.4×1.2 mm resolution, 3 mm, 0:18



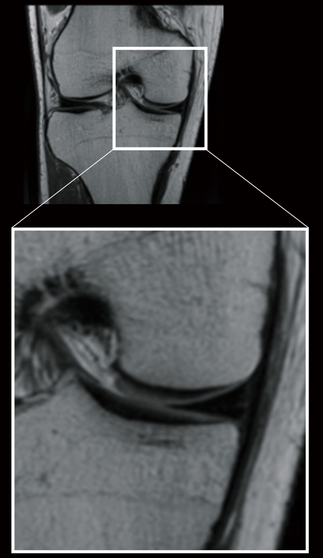
with Zoom DWI

Axial DWI b 800,
Reconstruction matrix 240×420,
1.5×1.6 mm resolution, 4 mm, 3:18

Courtesy of Honjo Clinic PET Diagnostic Imaging Center

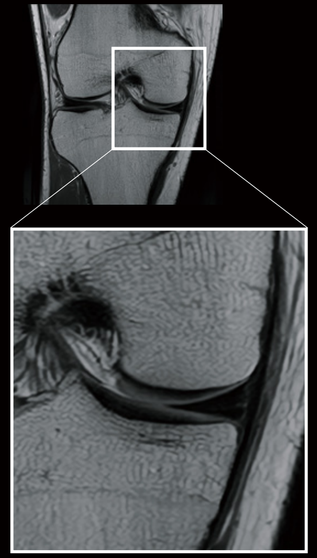
PIQE for Knee | Higher definition

Conventional



Coronal PDw, Acquisition matrix 288×288,
0.8×0.8 mm resolution, 2 mm, 3:38

PIQE



Coronal PDw, Reconstruction matrix 864×864,
0.26×0.26 mm resolution, 2 mm, 3:38

Volunteer

Vantage Galan 3T delivers superlative MRI performance through integration of advanced components and technologies.

Vantage Galan 3T / Supreme Edition delivers optimized MR performance that prioritizes sharp and distinct images delivered through integrated innovative whole system components, including high-quality magnet, Cross-pattern Supported Gradient Coil and Real-time Platform.

Powered by Altivity, Advanced intelligent Clear-IQ Engine (AiCE) and Precise IQ Engine (PIQE) utilize Deep Learning technology to remove noise to enhance SNR and boost resolution. Combined with a broad range of imaging protocols including accelerated scan technologies like Compressed SPEEDER and Fast 3D, you can achieve perfect harmony in your imaging capability.
With time-saving automated processes in the entire diagnostic pathway, quality examinations can be provided by anyone, anytime. Remote operation and monitoring with a mobile Tablet UX, Vantage Galan 3T pushes operational efficiency further than ever before.
Boasting whisper quiet scan sequences and a 71 cm bore opening, Vantage Galan 3T is optimized to put your patients at ease. And by being able to address challenging patient sets with distortion and motion correction, your facilities' imaging performance will meet the needs of referrers, staff and patients alike.
With refined combination of advanced components and intelligent technologies, Vantage Galan 3T offers you and your patients exceptional MRI experience every day.

Outstanding Confidence with Boosted AI

- Real-time Platform integrates system components including new magnet, gradient coil and RF technology, and realizes optimized MRI performance
- AiCE and PIQE utilize Deep Learning techniques to remove noise and enhance SNR to deliver clear, sharp and distinct images
- A suite of accelerated scan technologies like Compressed SPEEDER and Fast 3D reduce scan time to shorten procedures
- Address challenging patients with motion and distortion correction applications

Intelligent Productivity

- Auto Consult simplifies the entire MRI procedure by automating many processes in the diagnostic pathway
- Mobile patient monitoring and operation with mobile Tablet UX
- Advanced post processing capability with Olea/Vitrea technologies enhance diagnostic possibility

Patient Experience

- Short magnet and 71 cm bore offer an open MRI scanning environment
- Pianissimo technology delivers whisper quiet scanning

Altivity

Altivity is Canon Medical's new approach to AI innovation. It is a multimodality, overarching brand, which pulls together all the AI technology that Canon Medical provides under one name.

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Canon Medical Systems Corporation meets the Environmental Management System standard ISO 14001.

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The AI technology was trained during the development phase. When implemented into the product, the AI function no longer self-learns.

Made For life