

Canon



Vantage Orian

Advanced Confidence



AI solutions delivering Advanced Productivity for 1.5T MRI

With hospitals facing increasing case-loads and cost pressures, Vantage Orian delivers innovative solutions to the MRI suite to advance productivity. Specially developed to answer the needs of procedural efficiency with seamless diagnostic support, Vantage Orian utilizes a suite of AI solutions to accelerate scans and enhance image resolution. Simplify the lives of your MRI team through intelligent imaging and workflow solutions that are focused on saving time and delivering uncompromised diagnostic capability.

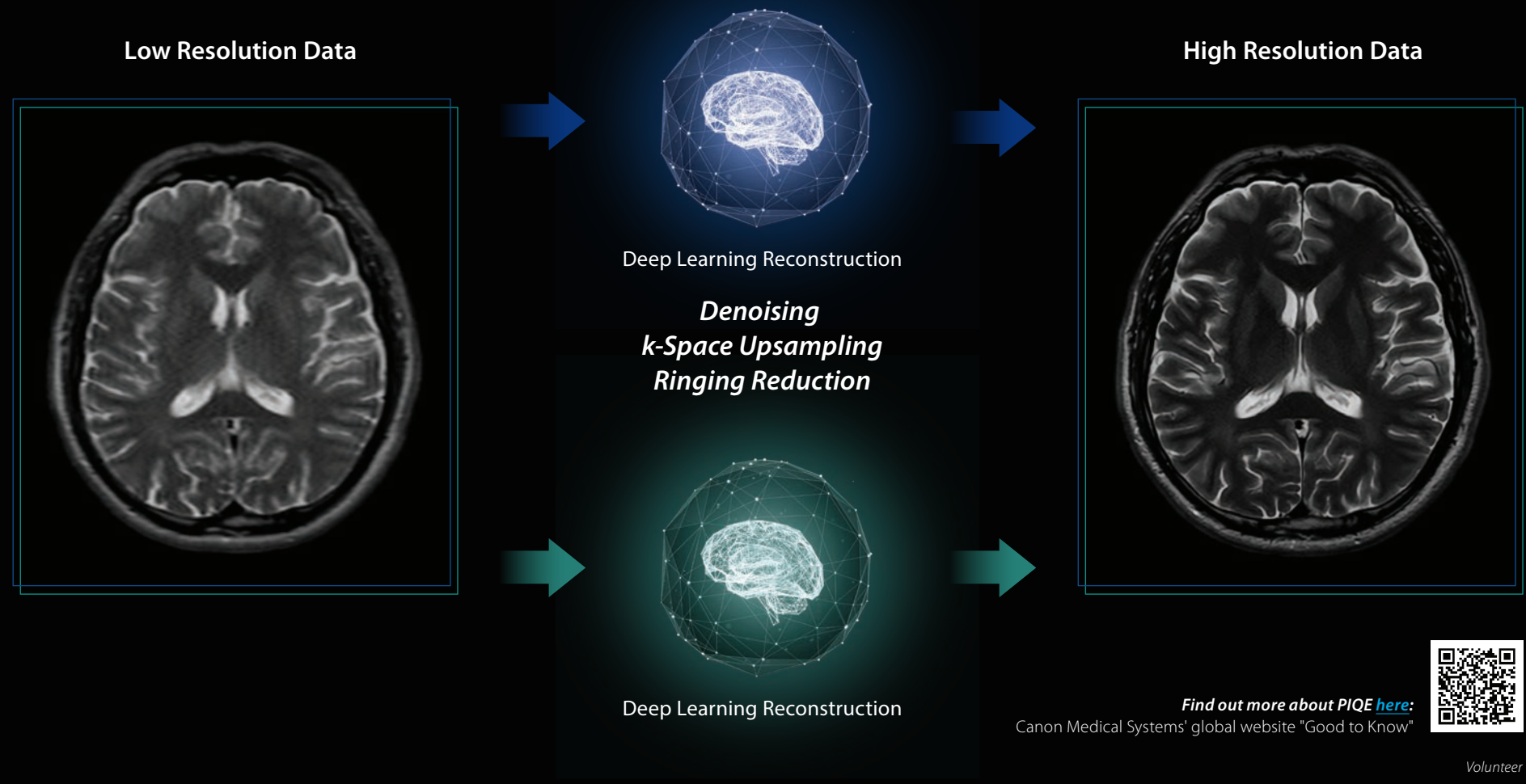
- 1
High image
Quality
- 2
Imaging
Productivity
- 3
Stable
Examination
- 4
Simplified
Workflow
- 5
Patient
Comfort

Vantage Orian

Precise IQ Engine (PIQE)

PIQE is our high resolution Deep Learning Reconstruction for MRI. PIQE increases matrix size, removes noise, and delivers sharp anatomical images which take MR imaging to the next level by utilizing two types of Neural Networks.

Deep Learning Reconstruction for MR PIQE



Find out more about PIQE [here](#):
Canon Medical Systems' global website "Good to Know"



Volunteer



Reconstruction matrix
 1024×1024
Axial PDw

Volunteer



Reconstruction matrix
 960×960
Coronal PDw

Volunteer



Acquisition matrix
 228×320



Reconstruction matrix
 960×960

Sagittal T2w

Images provided by Japanese facility



Acquisition matrix
 288×336



Reconstruction matrix
 1008×1008

Axial T2w

Images provided by Japanese facility

Advanced intelligent Clear-IQ Engine (AiCE)

AiCE intelligently removes noise from the images which results in higher SNR* and enables increased resolution. Neural Network reconstruct the data only with high frequency which related to noise and structure of the image. Contrast defined by low frequency data will be kept even after the reconstruction.



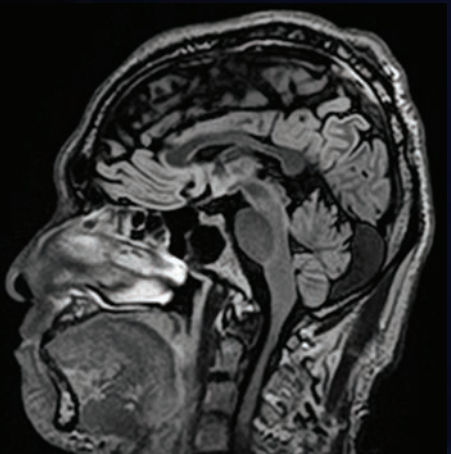
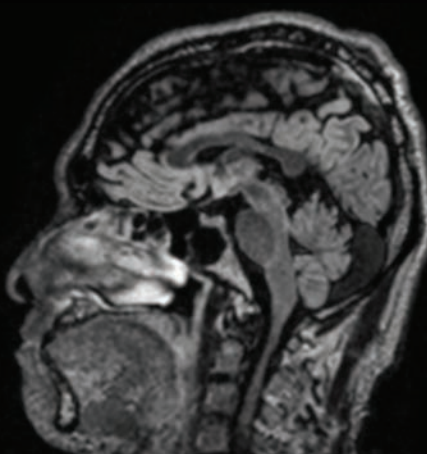
AiCE is applicable to a broad range of anatomies, contrast and applications, providing higher level of imaging in every situation.

Original

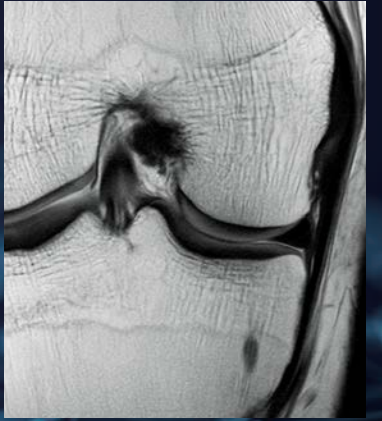
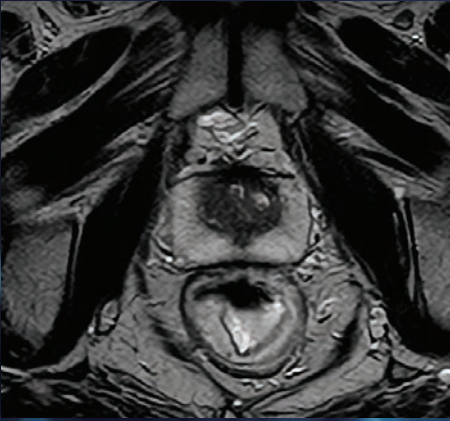
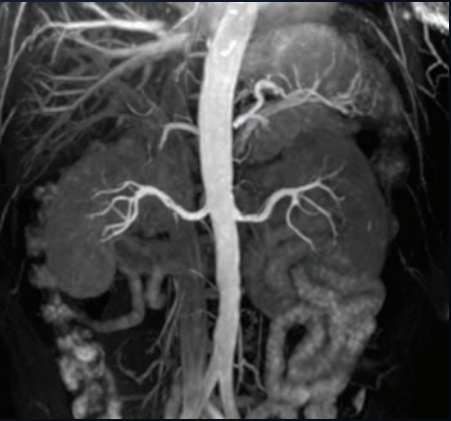
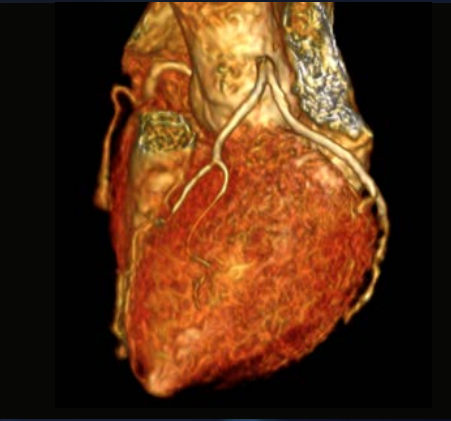
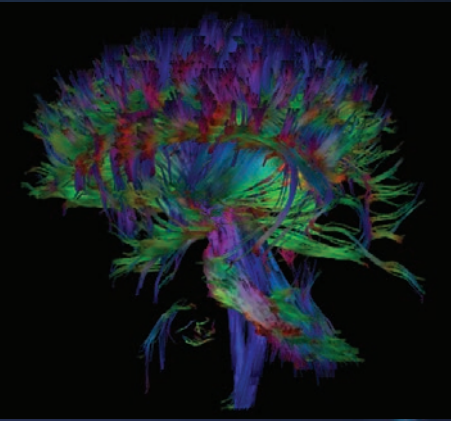
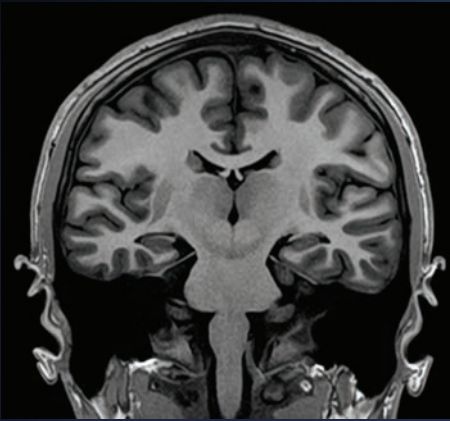


Coronal FFE3D, 1x1 mm resolution, 1 mm,
2:46

Original



3D Sagittal FLAIR, 1.25x1.25 mm resolution, 2 mm,
5:10



Find out more about AiCE [here](#):
Canon Medical Systems' global website "Good to Know"

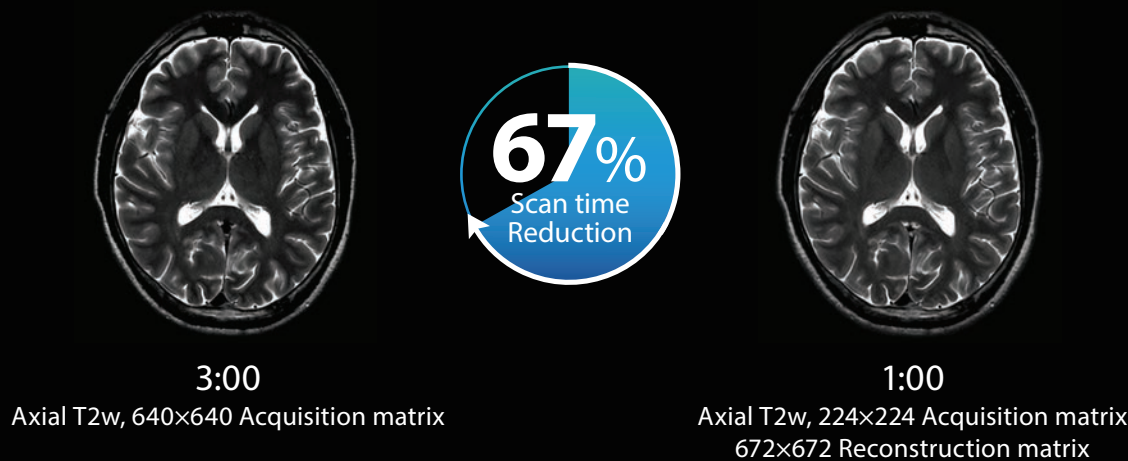


Volunteer

*Compared to lowpass filters

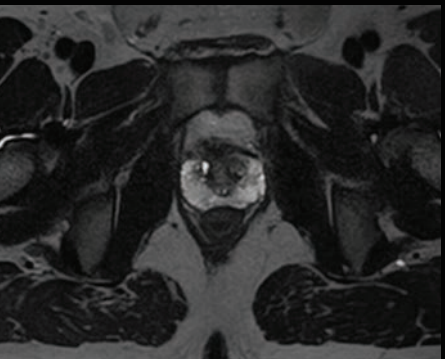
Short time examination with Deep Learning Reconstruction technologies

PIQE compensate SNR and resolution, image quality can be maintained even in a short scan time.



AiCE combines with rapid scan techniques

Combining AiCE with scan acceleration technologies like Compressed SPEEDER and Fast 3D mode enables you to scan faster and enhance SNR.



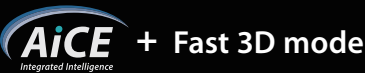
5:35
Axial 3D T2w,
0.5x0.5 mm resolution,
1.2 mm,
Compressed SPEEDER x2.5

Volunteer



3:05
Sagittal 3D PDw,
0.56x0.56 mm resolution,
1 mm,
Compressed SPEEDER x2.5

Volunteer



1:35
MRA3D,
0.78x0.78 mm resolution,
1.3 mm

Volunteer

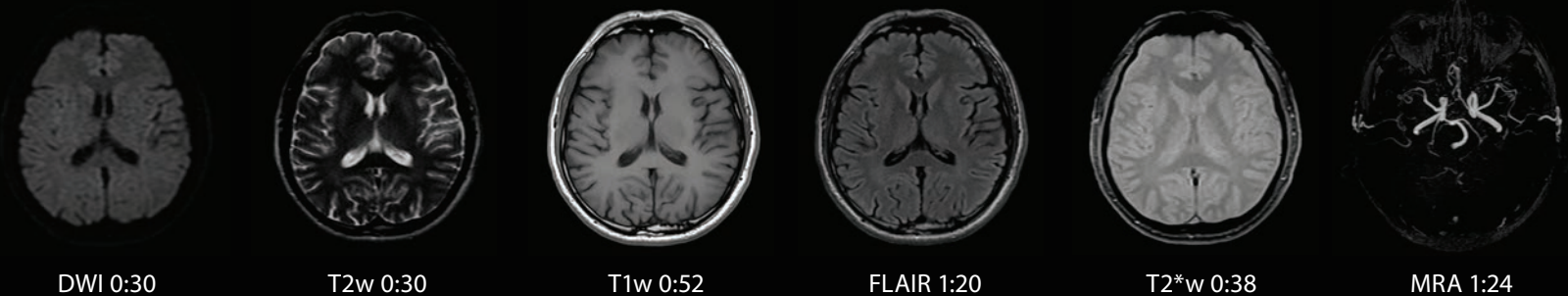


0:18
MRCP3D,
1.1x1.0 mm resolution,
3.5 mm

Courtesy of Hanwa Memorial Hospital

Brain routine

5:14



Shoulder routine

3:04

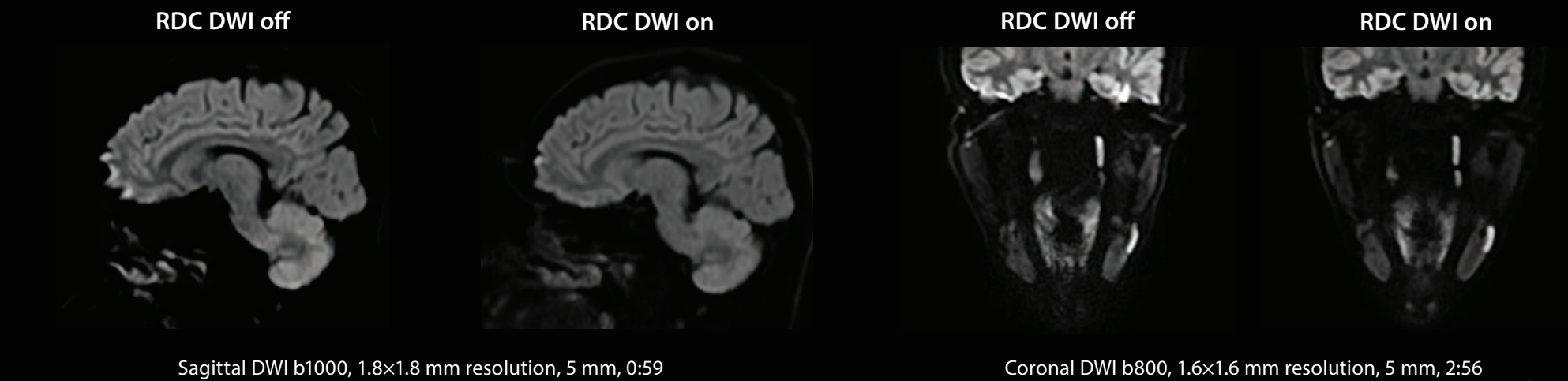


Volunteer

Stabilize Diffusion imaging with less distortion

RDC DWI

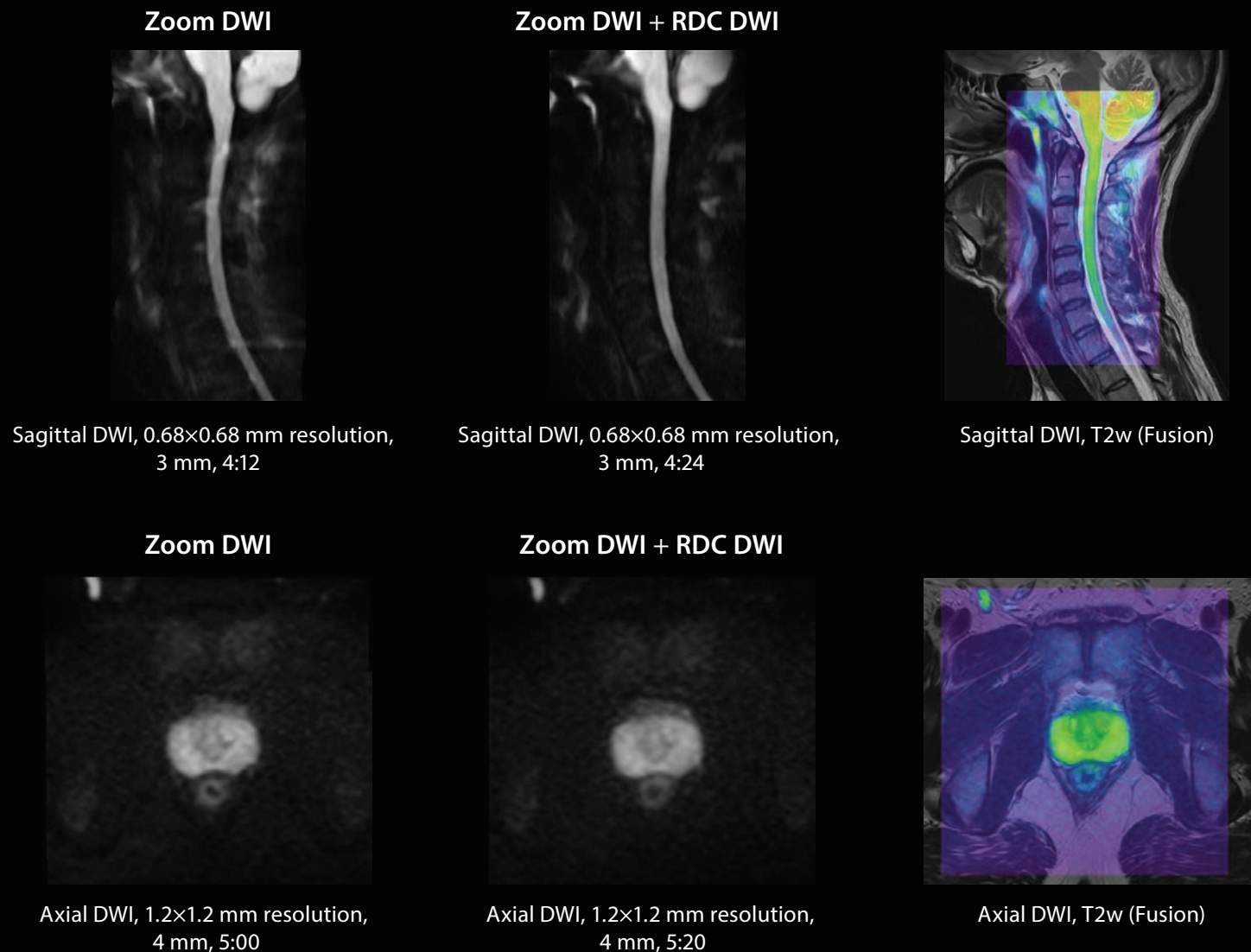
In diffusion weighted imaging, distortion can be easily caused due to B0 field inhomogeneity or eddy current. RDC DWI (Reverse encoding Distortion Correction DWI) is intended to reduce distortion in phase encoding direction by estimating the distortion with generated shift maps.



Volunteer

Zoom DWI

With Zoom DWI, diffusion weighted imaging with small FOV can be acquired suppressing distortion and unfolding errors. The combination of RDC DWI and Zoom DWI enhances the stability of the image and expand the diagnostic reliability.

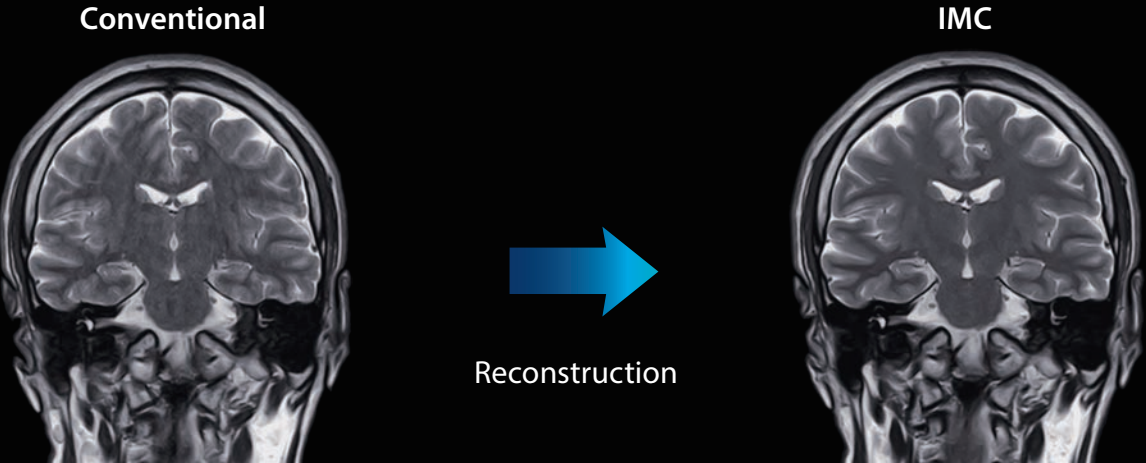


Volunteer

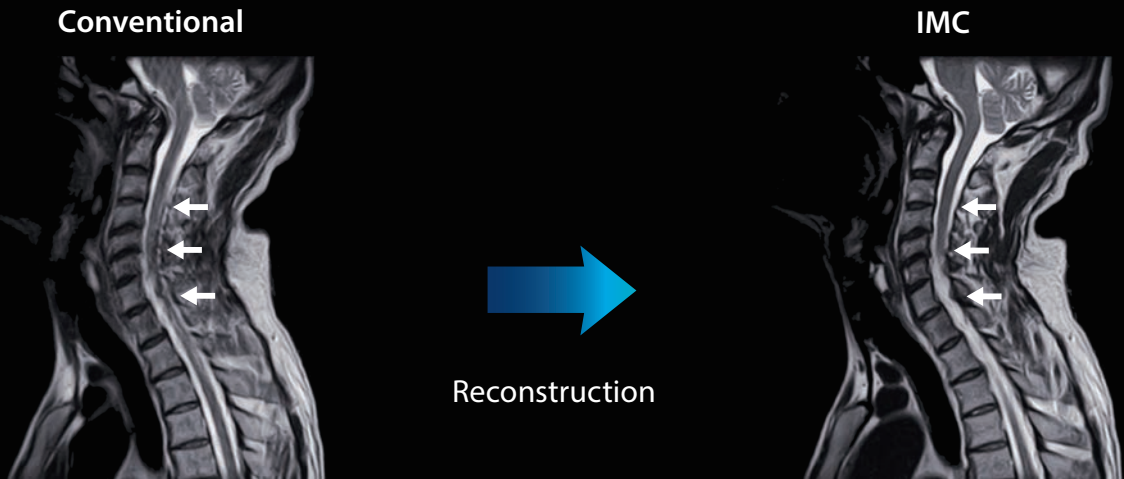
Enhance the diagnosis consistency with the accuracy of the image

Iterative Motion Correction (IMC)

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



Coronal T2w, 0.7×0.7 mm resolution, 4 mm, 1:56



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

Volunteer

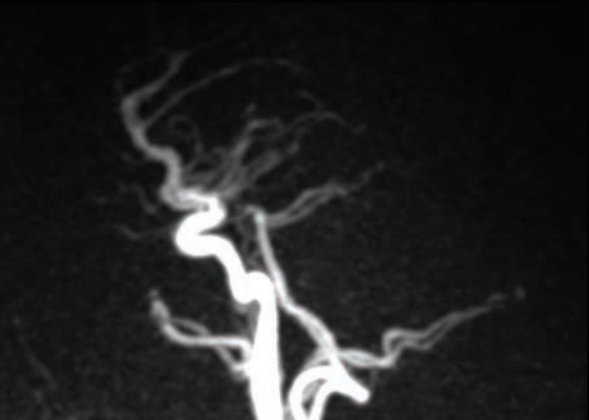
Advanced UTE imaging with CG Recon

Ultra-short TE (UTE) sequence not only allows users to visualize the region like lung, bone and tendon with short relaxation times, but also reduce the artifacts caused by metallic devices in MR Angiography.

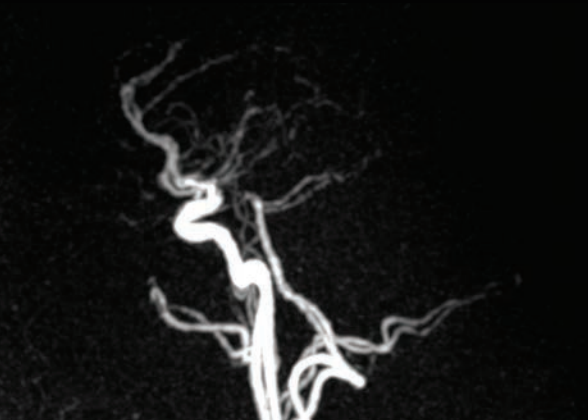
CG Recon (Conjugate Gradient Reconstruction) enhances the accuracy of signal estimation in UTE imaging and helps achieve more detailed visualization of tissues and vasculature.

Lorem ipsum

Conventional



CG Recon



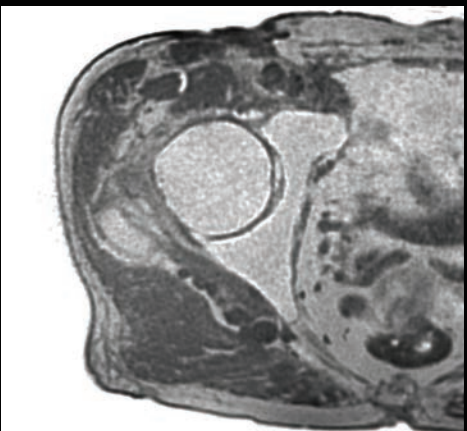
3D Axial UTE, 1×1 mm resolution, 1 mm, Spokes 4000, 4step 3:48



Coronal UTE, 1×1 mm resolution, 1 mm, 4:30



Sagittal UTE, 1.4×1.4 mm resolution, 1 mm, 5:28



Coronal UTE, 0.78×0.78 mm resolution, 0.78 mm, 4:41

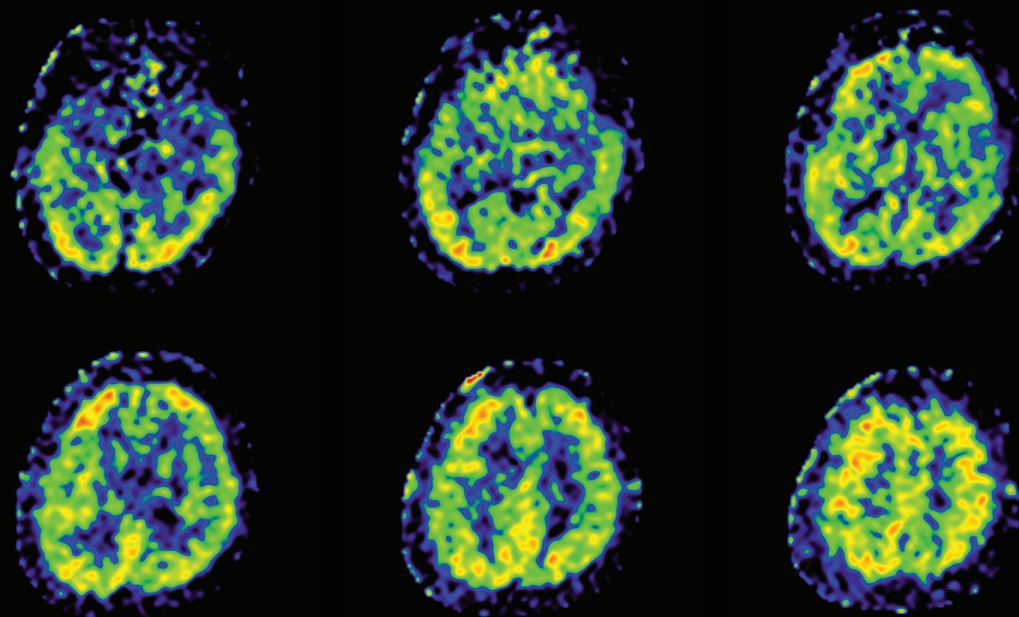
Volunteer

MR angiography without the need for contrast media

Imaging with contrast media is a burden for both patients and operators. As a pioneer of the technology, Canon offers a stable and reliable examination for imaging the vasculature without the use of contrast.

pCASL

pseudo-Continuous Arterial Spin Labeling (pCASL)
Performs measurements of cerebral blood flow (CBF).
CBF map is calculated based on the Buxton model and measured in ml/100 cc/min.



multiple TI MRA with ASTAR (mASTAR)

The multiple TI (4D) generates dynamic images visualizing the blood flow.



Phase 1

Phase 2

Phase 3

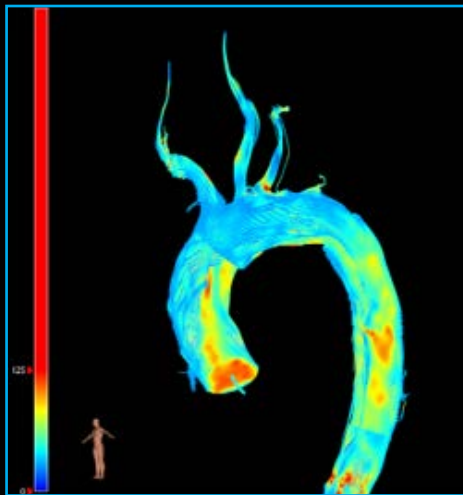
Phase 4

Volunteer

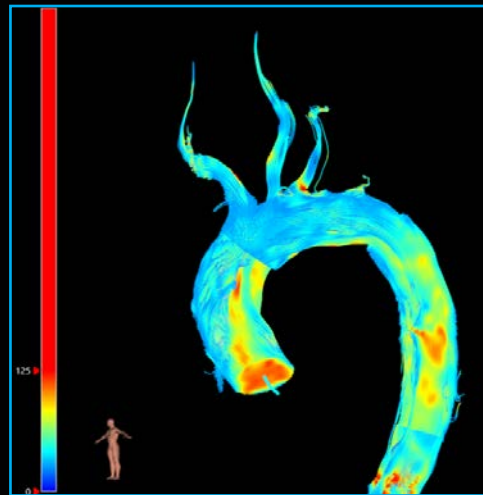
4D Flow

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

Conventional



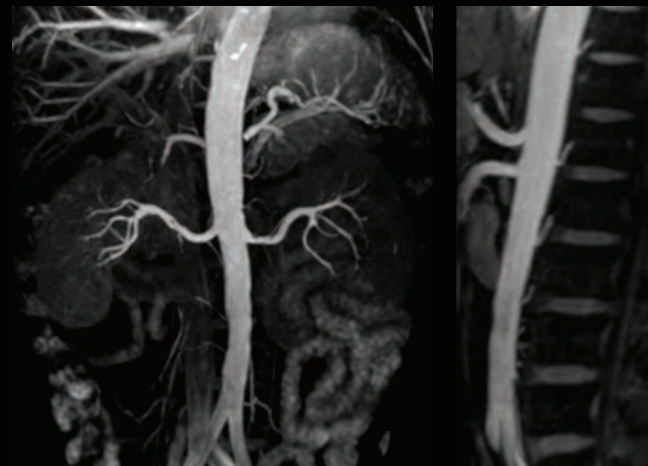
PIQE



Volunteer

Time-Spatial Labeling Inversion Pulse (Time-SLIP)

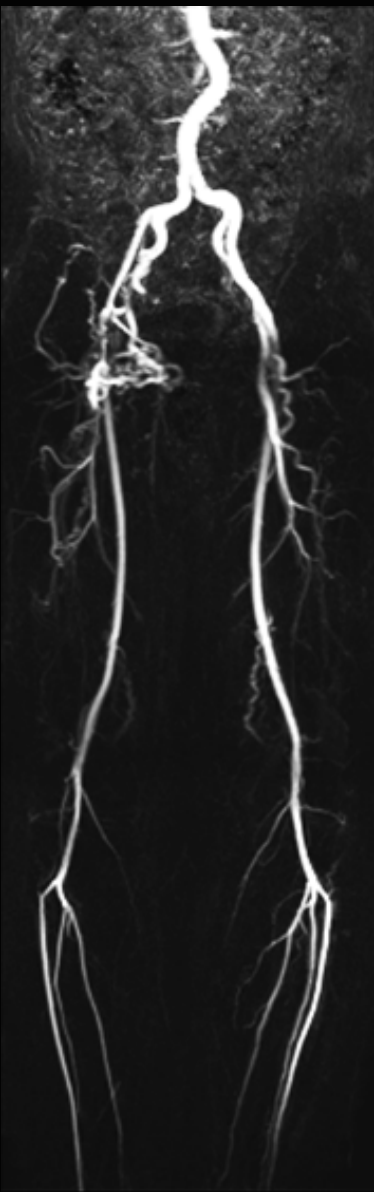
Time-SLIP is an Arterial Spin Labeling variant, which uses blood as an endogenous tracer to produce accurate angiograms.



Volunteer

Flow-Spoiled FBI (FS-FBI)

FBI distinguishes arteries from veins by utilizing the loss of arterial signal in systole. FS-FBI vastly improves flow depiction in the lower extremities or patients with poor circulation by taking advantage of a small dephasing gradient.



Courtesy of Toyama Health Screening Plaza

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

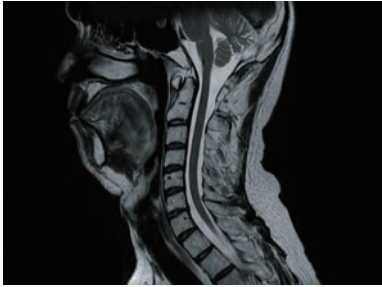
Scanning is automatically started when the scan room door is closed.





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 isocenter utilizing position detection from the Ceiling Camera.

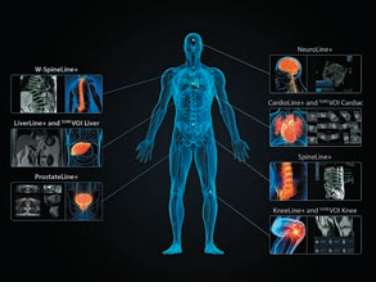


powered by  **Altivity**



Auto Planning

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

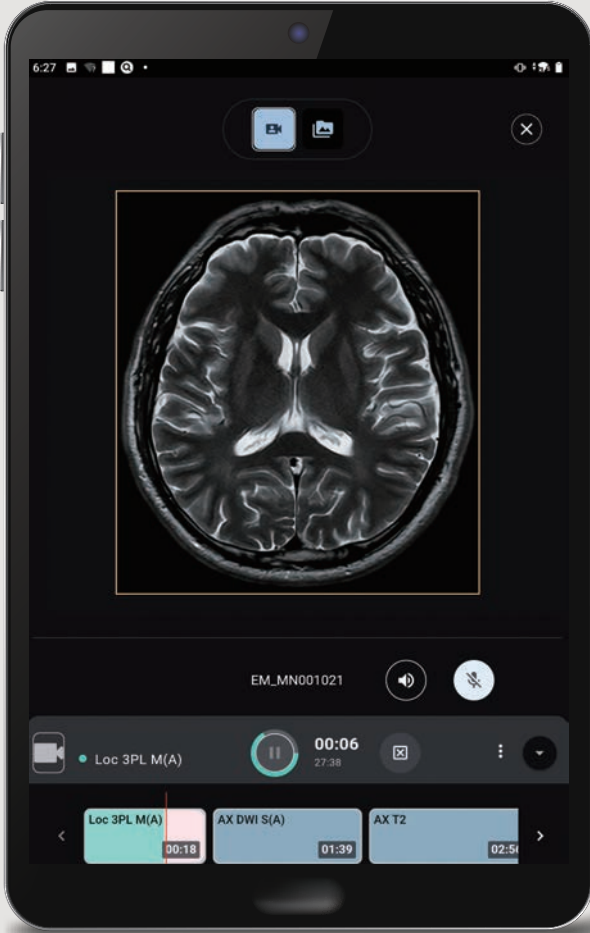


* SUREVOI Cardiac is model-based algorithm.



Operate the MRI examination from anywhere with Tablet UX software

With the mobile Tablet UX software, 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.



3 features

Worklist

Patient list can be imported from RIS and the patient information is populated for the new examination.

Study file

Patient information and examination type can be confirmed and assigned before entering the scan room. Based on the information, you can set the protocol, coil and patient position to be used for the exam in advance.

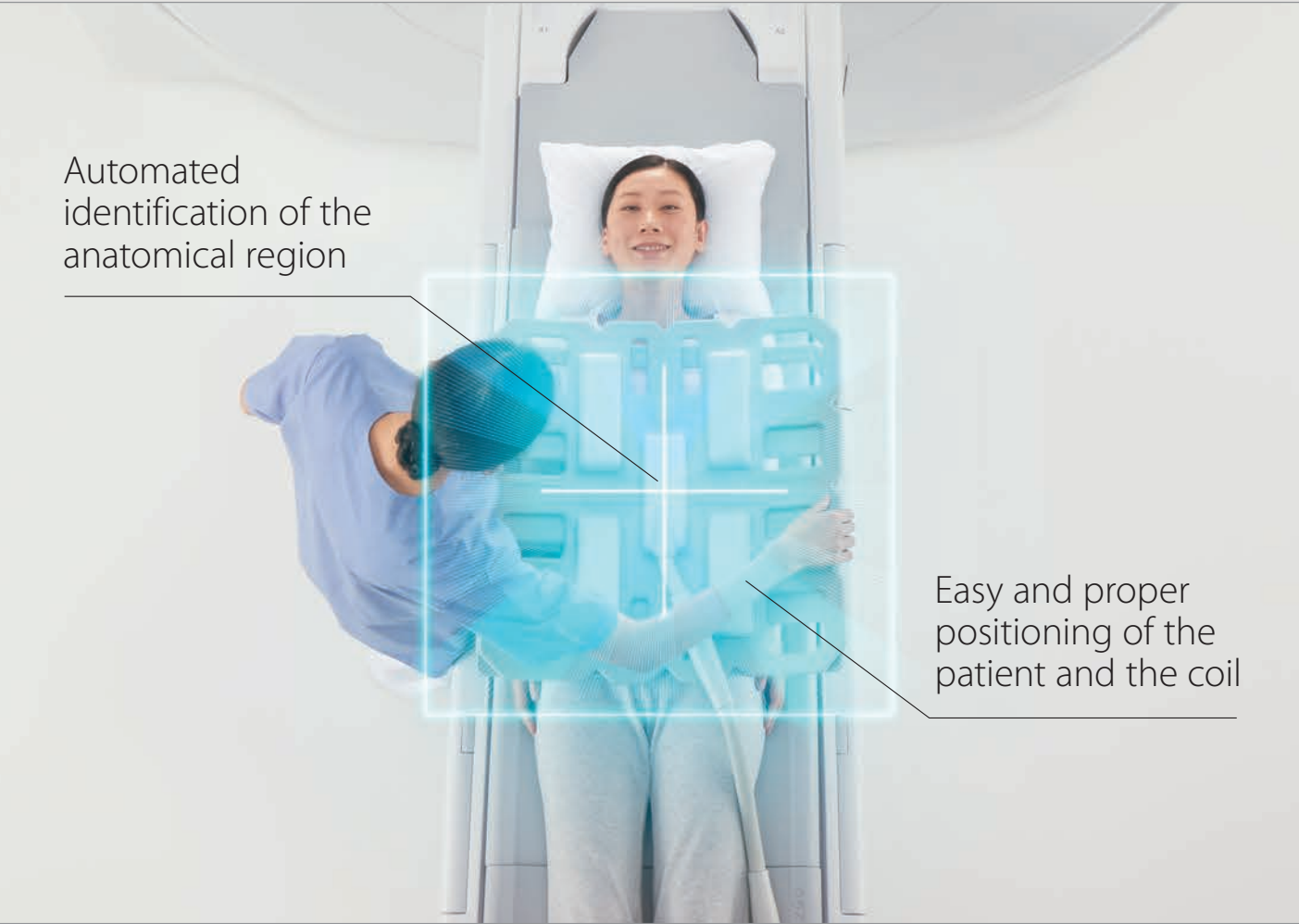
Monitoring

Confirmation of the exam completion and preview of the results to verify image quality is possible. Operators also can monitor the patients' condition and communicate remotely with the patient.



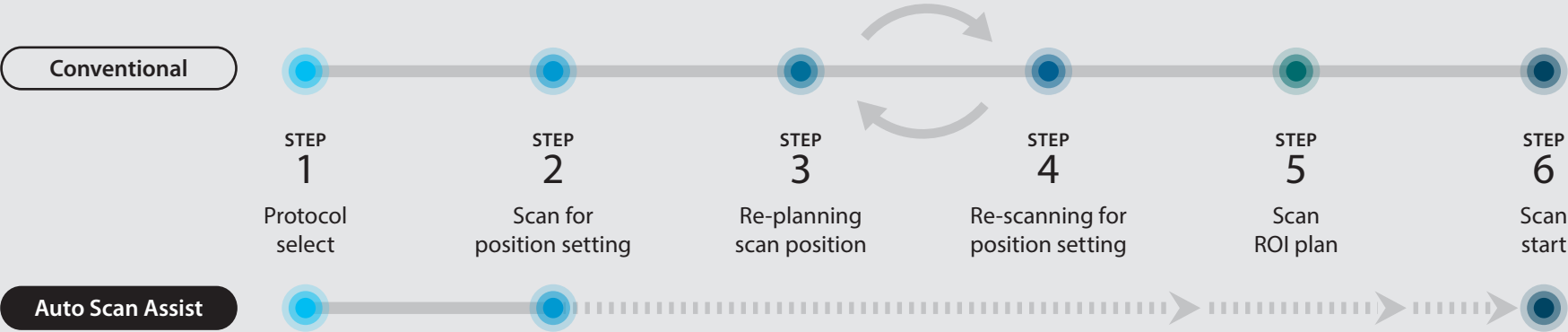
Automated landmark setting with Ceiling Camera

The ceiling camera helps position the coil perfectly, and the patient can be positioned correctly with one click. The intelligent monitor on the gantry displays the patient view captured by the ceiling camera and the mid-line of the patient table in real time to assist in patient positioning. The system matches the PAS information registered in advance on the Tablet UX or MR console with the detected singular points on the patient's body, identifies the anatomical region, and displays the landmark to be scanned on the intelligent monitor.



Auto Scan Assist minimizes set-up steps and improves workflow

Powered by Altivity, Auto Scan Assist takes away the variability and helps you improve workflow with automatic slice alignment for neuro, spine, cardiac, liver, prostate and knees, standardizing your workflow with automatic positioning.



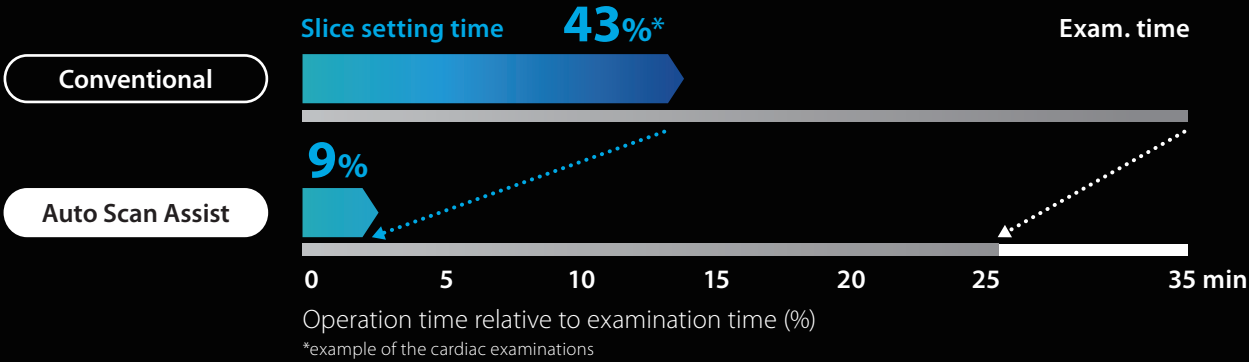
Up to **85%**
Reduction of
operational steps

Up to **79%**
Reduction of
operational* time

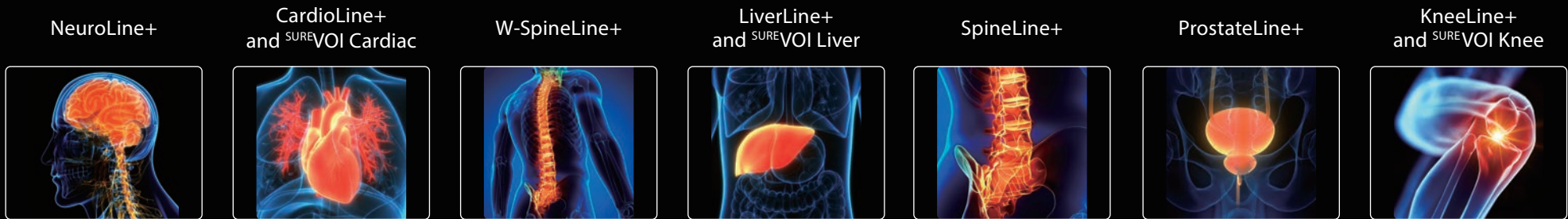
*Based on the internal data results of image selection, plan setting steps and time savings.



14 planes
are automatically detected



1/5
Burden on the
operator



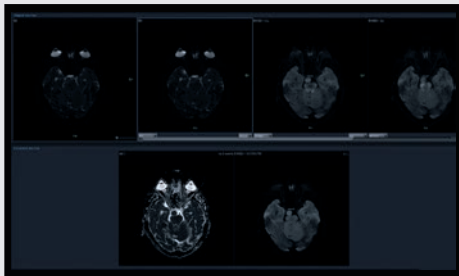
*SUREVOI Cardiac is the machine Learning based technology.

Intelligent advanced post processing

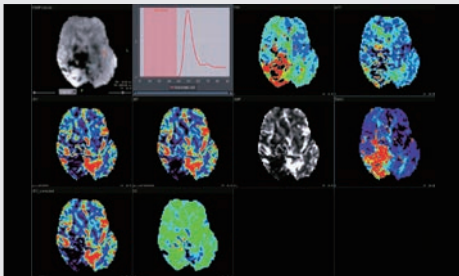
MR Clinical suite

MR Clinical Suite includes Diffusion, Perfusion and streamlined application for all body regions. This package provides access to features which enhance the clinical routine.

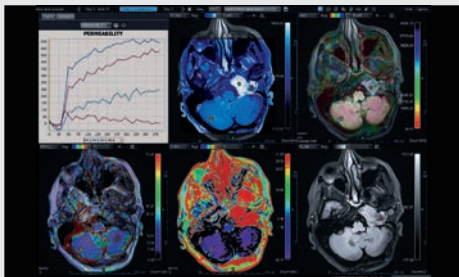
Diffusion Weighted Imaging (DWI)



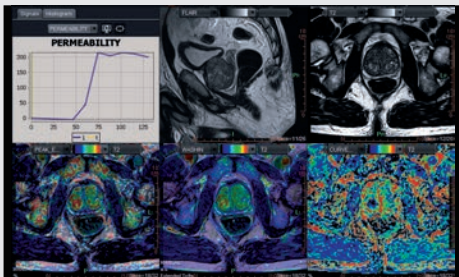
DSC Perfusion



Head & Neck streamlined

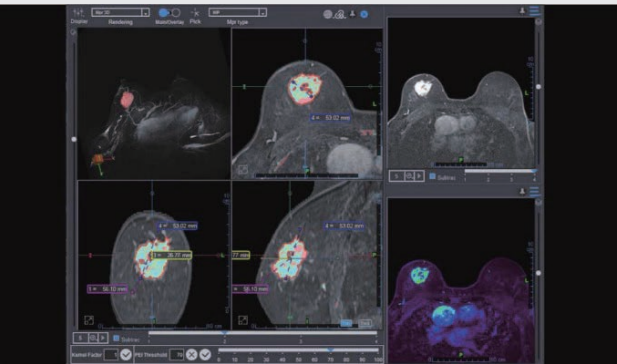


Prostate streamlined



MR Breast Advanced

MR Breast Advanced contains BreastApp to aid in lesion identification and BreastLoc to support the planning of interventional procedures.



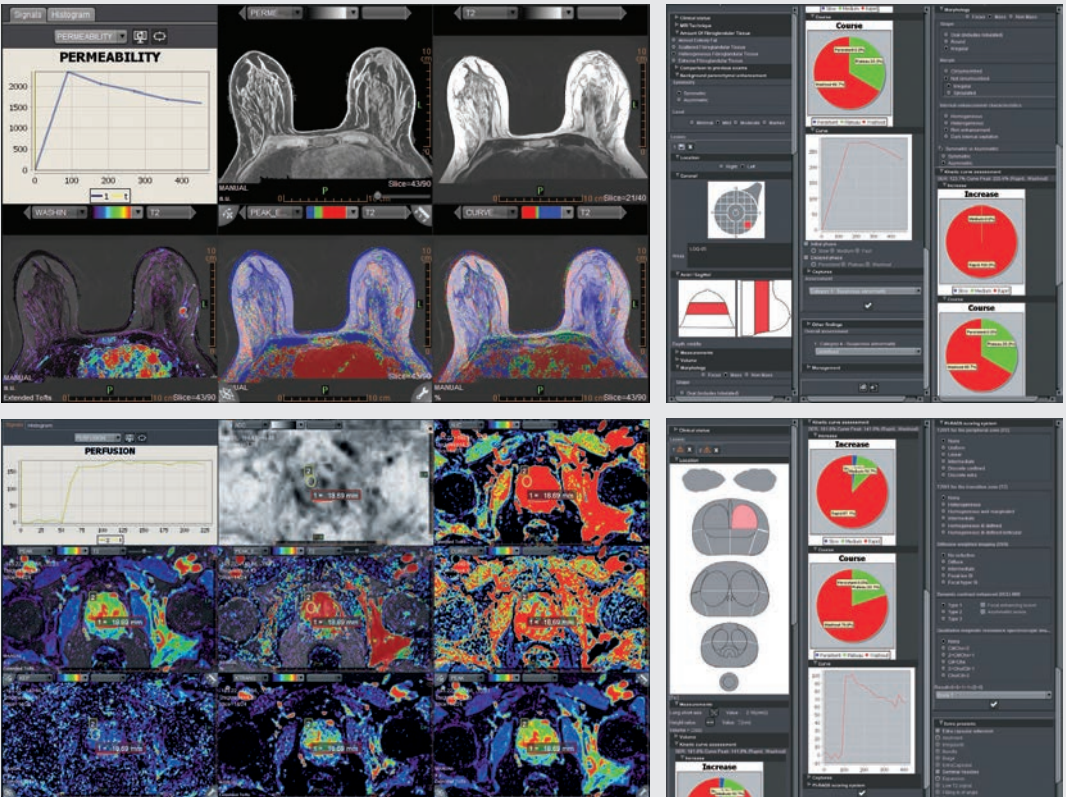
Global Illumination

This innovative 3D/4D rendering technique helps to provide a more photorealistic view of human anatomy. Users share findings more clearly with both healthcare professionals and patients.



Dedicated automatic reporting

Stroke, breast (BI-RADS®) and prostate (PI-RADS® v1 and v2) automatic compliant reports. This helps efficient exam communication in your facility.



* These products and functions are designed and manufactured by Olea Medical.

A Comfortable patient experience enables effortless procedures

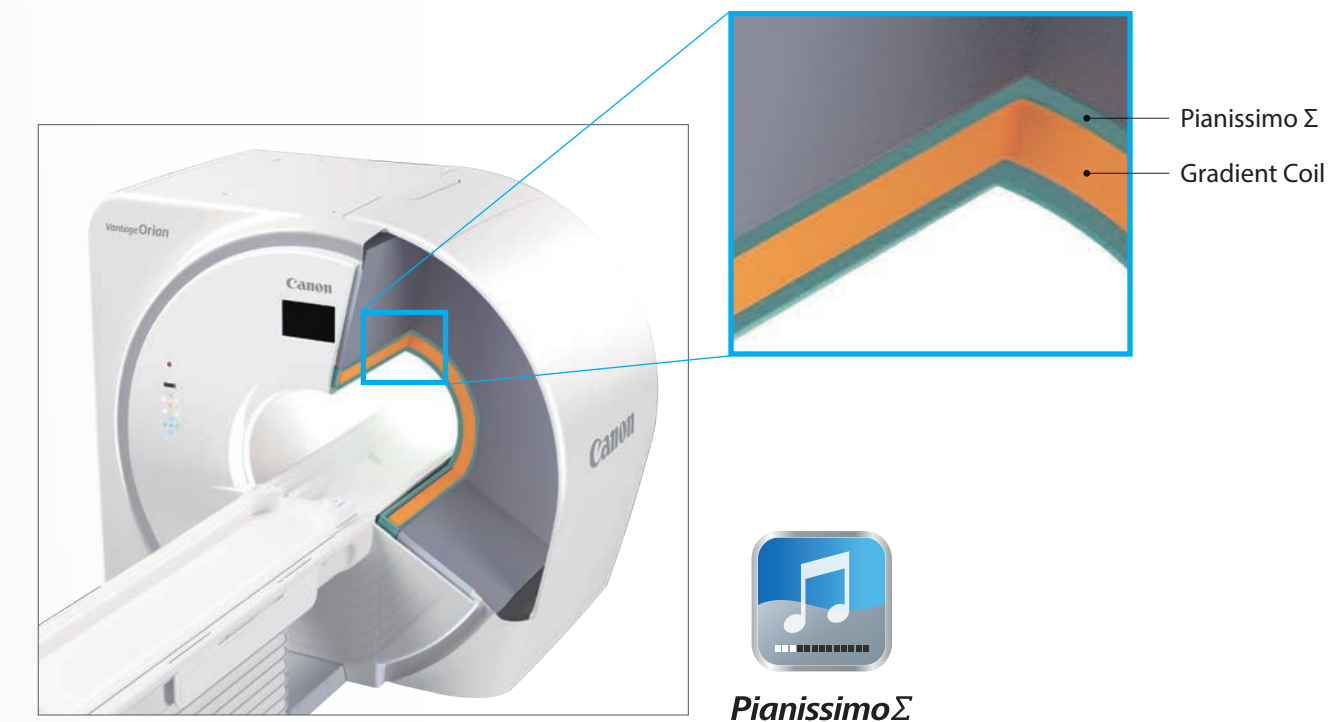
71 cm wide bore

The wide bore patient aperture enhances patient comfort and allows for imaging in the prone position.



Quiet exams prioritizing patient comfort

Canon's unique Pianissimo Σ (Sigma) is a multi-layer insulation technology that optimizes sound absorption to significantly reduce noise in and around the MRI environment for every sequence, improving the patient experience. And Pianissimo Zen quiet sequences further reduce noise to just above the ambient noise level.





Our intelligent gantry interface has been re-designed to enhance workflow and save set-up time, displaying important patient related and coil information while allowing a complete setup without leaving the patient's side.



The Dockable Table enhances workflow and provides easy patient handling allowing medical staff to respond to any patient requirement quickly and easily.

Vantage Orian – a truly smart investment choice

With outstanding productivity enhanced by high end migrated 3T technology, Vantage Orian keeps your staff moving. Combining industry leading patient friendly features, low energy consumption, a small footprint and outstanding Canon service offerings, Vantage Orian takes care of business.

ECO Space

Minimize investment in valuable floor space with a 29.8 m² footprint that excels in the 1.5T wide bore market.¹



Total Installation
Space



Scan Room
Space

ECO Mode

ECO Mode reduces power consumption to minimize system operating costs. ECO Mode can be automatically activated simply by lowering the couch once the procedure is complete.



ECO Mode



Power Requirement

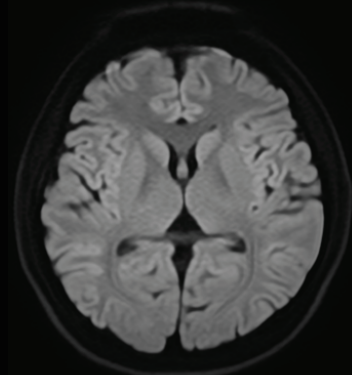


1 The 5 Gauss line is not confined within the Scan Room. Controlled access area should be taken into account by the facility when preparing for installation. The above specifications may not meet the local requirements. Please consult with your architectural and/or electric consultant for coding requirements. Some power equipment may be required to be placed in a dedicated electrical room. The minimum footprint may not be applied to some cases depending on each site.

2 For Saturn X Gradient, 80 kVA is required.

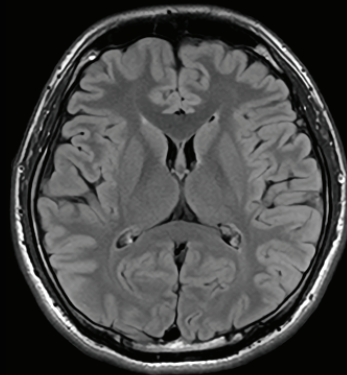
Brain | PIQE. RDC DWI. Exsper. Fast 3D mode

PIQE + Exsper + RDC DWI



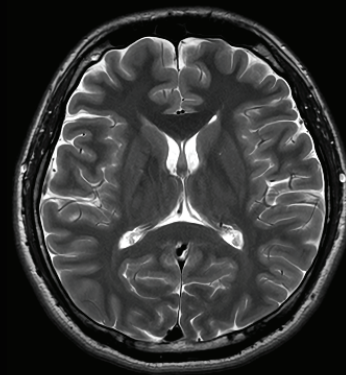
Axial DWI, b1000,
Reconstruction matrix 480×480,
Exsper ×2, 1:09

PIQE + Exsper



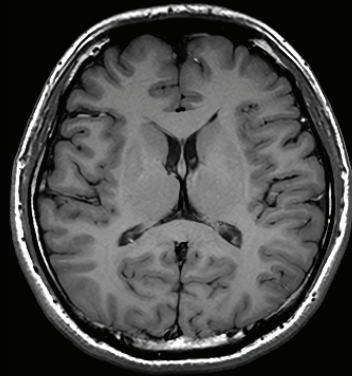
Axial FLAIR,
Reconstruction matrix 768×768,
Exsper ×2, 1:56

PIQE + Exsper



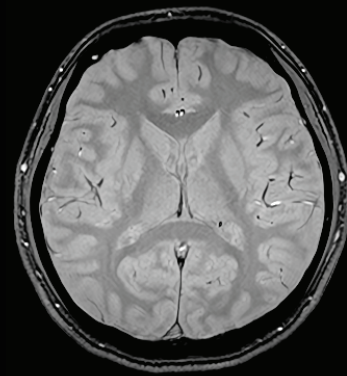
Axial T2w,
Reconstruction matrix 960×960,
Exsper ×2, 1:44

PIQE + Exsper



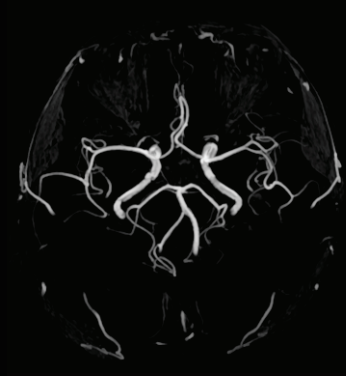
Axial T1w,
Reconstruction matrix 768×768,
Exsper ×2, 2:16

PIQE + Exsper



Axial T2*,
Reconstruction matrix 720×720,
Exsper ×2, 2:33

Fast3D mode



3D MRA,
0.78×0.78 resolution,
1:48

Volunteer

C-Spine | PIQE

Original

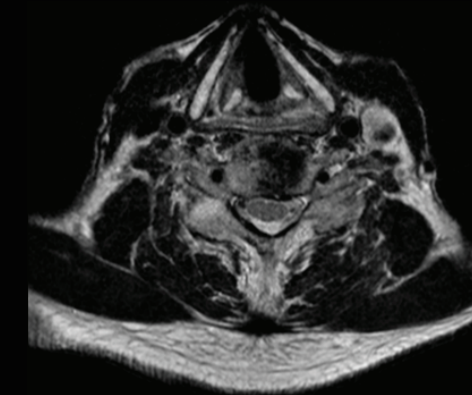


Sagittal T2w,
Aquisition matrix 960×960

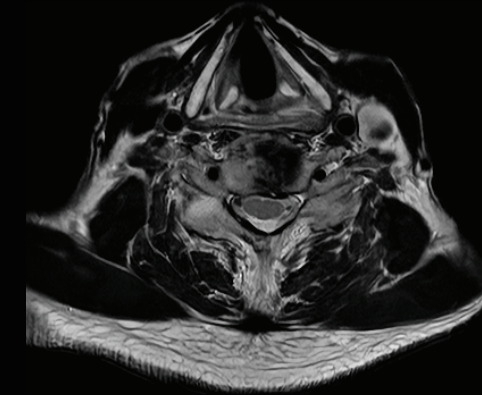
PIQE



Sagittal T2w,
Reconstruction matrix 960×960



Axial T2w,
Aquisition matrix 960×960



Axial T2w,
Reconstruction matrix 960×960

Images provided by Japanese facility

Prostate | PIQE

Original



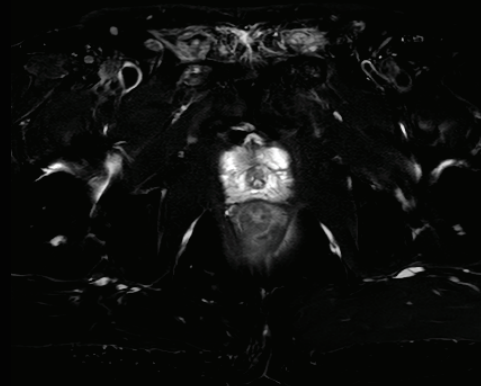
Axial T2w,
Acquisition matrix 288×336

PIQE



Axial T2w,
Reconstruction matrix 1008×1008

PIQE



Axial FS T2w,
Reconstruction matrix 1104×1104

PIQE

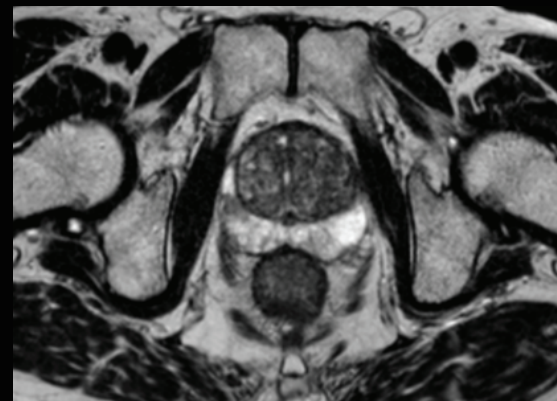


Axial T2w,
Reconstruction matrix 1104×1104

Images provided by Japanese facility

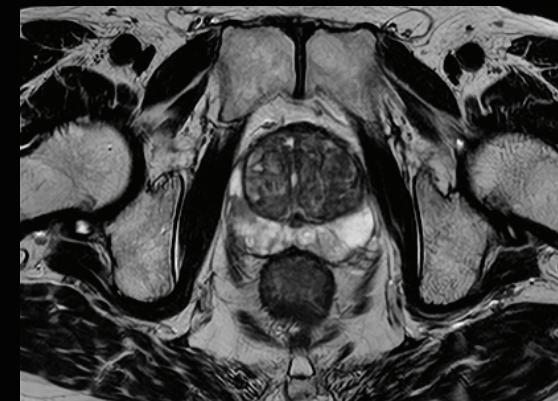
Prostate | PIQE

Original



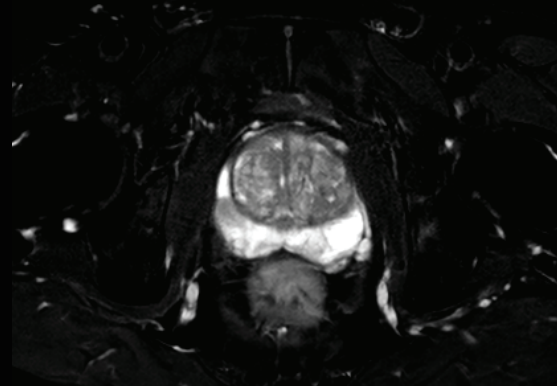
Axial T2w,
Acquisition matrix 256×256

PIQE



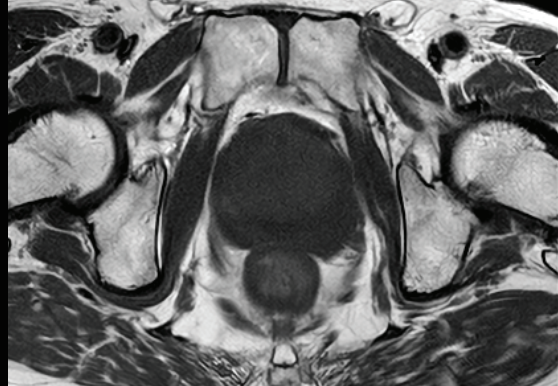
Axial T2w,
Reconstruction matrix 768×768

PIQE



Axial FS T2w,
Reconstruction matrix 816×816

PIQE



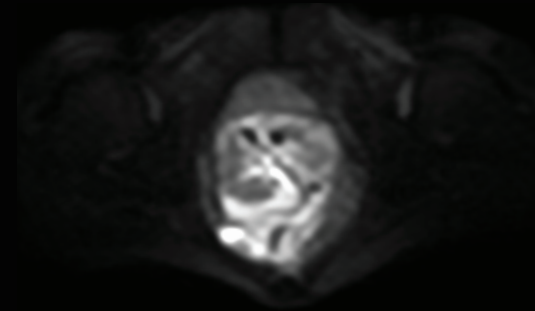
Axial T1w,
Reconstruction matrix 864×864

Courtesy of Sano Medical Center, Sano Municipal Hospital

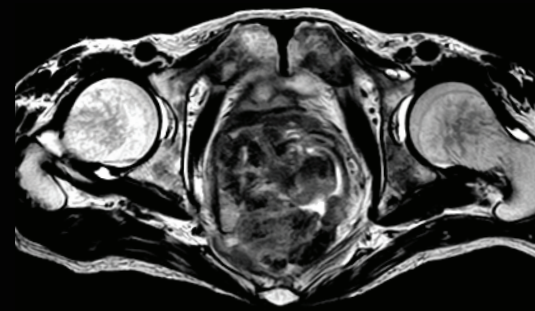
Pelvis | RDC DWI



RDC DWI



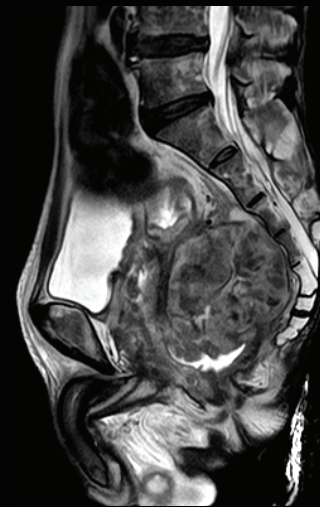
Axial DWI, b800, 2.5×2.5 resolution,
4 mm slice, 3:22



Axial T2w, 1.0×0.8 resolution,
4 mm slice, 1:58



Sagittal T1w, 1.1×0.9 resolution,
3 mm slice, 2:18



Sagittal T2w, 1.0×0.8 resolution,
3 mm slice, 3:20

Courtesy of Hanwa Memorial Hospital

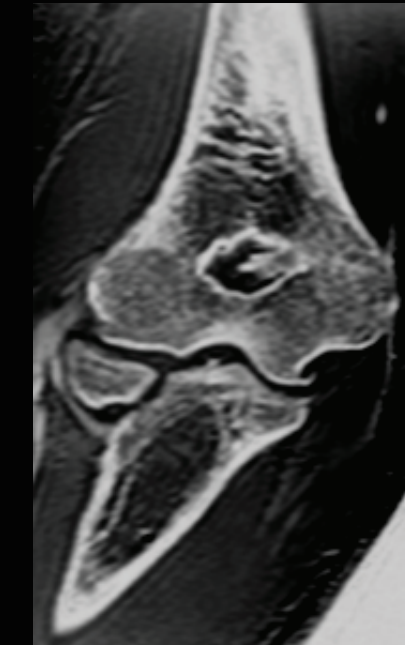
Elbow | Bone-like Imaging



Sagittal FFE3D (MPR),
1.2×0.8 mm resolution,
1.2 mm slice, 3:09



CT Sag (MPR)



Coronal FFE3D (MPR),
1.2×0.8 mm resolution,
1.2 mm slice, 3:09



CT Cor (MPR)

Courtesy of Neurosurgery Kawasoe Clinic



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Vantage Orian is a premium 1.5T MRI system designed to enhance productivity and reduce costs every day, take care of patient comfort and deliver outstanding clinical performance, you can be sure that you are purchasing the complete 1.5T MRI package. This product features technologies that are powered by Altivity, Canon's suite of intelligent AI solutions that remove noise and enhance the resolution of the image, automate routine set-up steps, and confirm patient positioning before scanning. Image quality is enhanced with Deep Learning Reconstruction technologies, and scan time can be reduced in combination with scan acceleration techniques like Compressed SPEEDER and Fast 3D mode. Stability of the examination is provided by the technologies which reduce the chance of artifacts or insufficient depiction of the details, and helps to avoid unnecessary rescanning. From a mobile interface that allows remote monitoring and seamless data integration, to in-room scan assist features like Ceiling Camera and Auto Scan Assist, we get you and your patient moving from waiting room to scan room to home. This system is also designed with features to relax the patient with Pianissimo noise reduction and a 71 cm wide bore. Now, let's move with the following advanced features:

High image quality

- PIQE realizes high SNR and high resolution images with 2 types of neural networks
- AiCE helps you remove noise to deliver clear, sharp and distinct images

Imaging productivity

- PIQE and AiCE improve SNR and resolution, achieving clear images in a shorter scan time
- Fast scan technologies like Compressed SPEEDER and Fast 3D mode reduce scan time

Stable examination

- RDC DWI reduces distortion, even in small FOV imaging especially when combined with Zoom DWI
- Iterative Motion Correction (IMC) reduces motion artifacts and helps reduce re-scanning
- CG Recon enhances delineation of the details and allows you to obtain stable UTE images
- Canon's non-contrast MRA technology delivers consistent and non-invasive vascular imaging solutions

Simplified workflow

- Remote monitoring and seamless patient handling with mobile Tablet UX software
- Enable automated patient positioning and coil set-up with the Ceiling Camera and Intelligent Monitor
- Auto Scan Assist reduces the burden of the operator with automatic slice positioning
- Advanced post processing with Olea/Vitrea

Patient comfort

- Pianissimo technology delivers whisper quiet scanning
- Short magnet and 71 cm wide bore offers an appreciated openness in the MRI scanning environment



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