Vantage Orian

Advanced Confidence

Advanced Confidence
High Productivity
Patient Comfort

Vantage Orian utilizes intelligent MR technology, powered by Altivity, to deliver advanced confidence to the 1.5T MRI suite. Combining outstanding workflow solutions, patient friendly features and the ability to manage routine and complex exams, Vantage Orian is the perfect balance for your 1.5T MRI business and clinical requirements.

Vantage Orian

AI-boosted imaging capability combined with intelligent workflow creates advanced productivity.

Seamless patient handling and set-up

The Tablet UX remotely confirms and integrates patient information, while minimizing timely set-up processes and the need for re-scanning.

Scan room assistance with intelligent Ceiling Camera

Make efficiency a reality with the intelligent Ceiling Camera solution that confirms key information and assists patient positioning.

Ceiling Camera

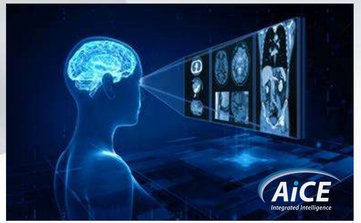
The AI technology was trained during the development phase. When implemented into the product, the AI function no longer self-learns.

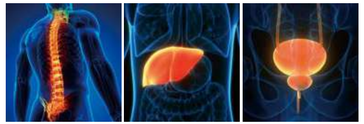
Advanced Post Processing

Advanced post processing through Olea's and Vitrea solutions provides the opportunity for expanded MRI diagnostic services.

Advanced intelligent Clear-IQ Engine (AiCE)

AiCE intelligently removes noise to produce stunning MR images that are exceptionally detailed, and with the low-noise properties of a high SNR image.

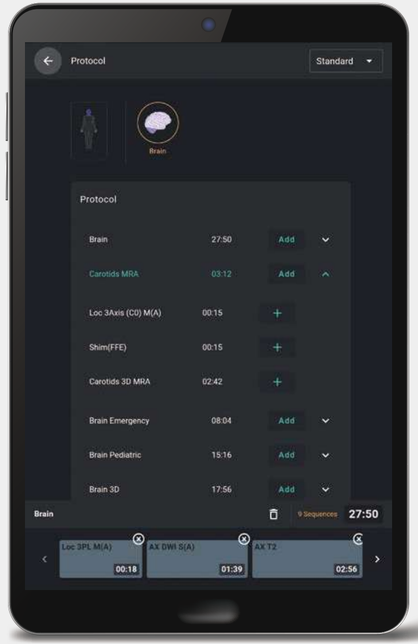




Auto Scan Assist

Auto Scan Assists improves your workflow with automated slice alignment to reduce variability for a range of standard exams across the whole body.

Productivity at your fingertips

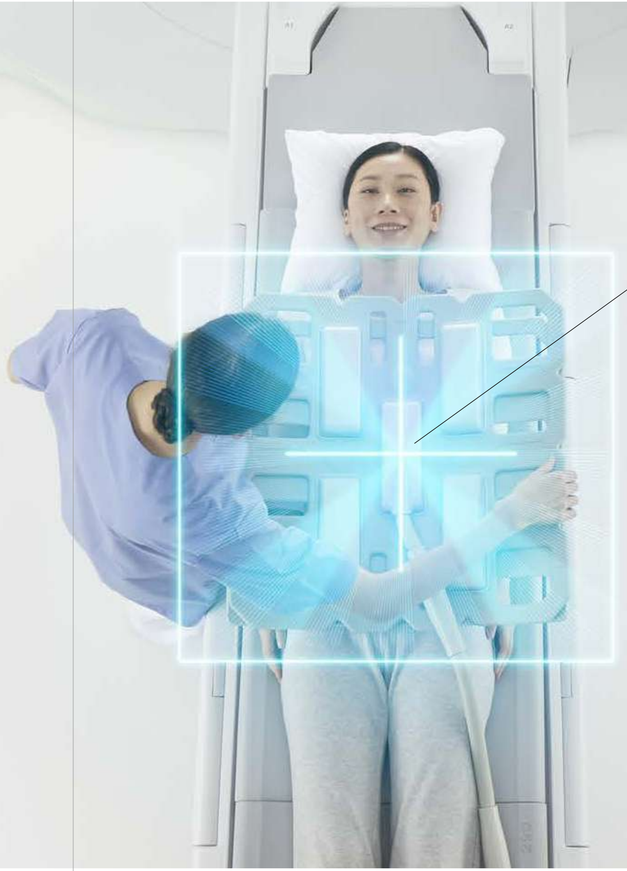


Minimize patient exam preparation steps with the Tablet UX

Increase efficiency and remove redundancy with patient information seamlessly and remotely integrated into hospital information systems.

Remote scan monitoring

Save time by remotely monitoring scans in progress, while also registering and preparing the next patient.



Optimize efficiency with Ceiling Camera and Intelligent Monitor

Automated Landmark Setting

Displayed at the imaging site selected by Protocol Anatomical Selection (PAS) Imaging center line is determined from the PAS reserved on the tablet or the PAS registered on the console.

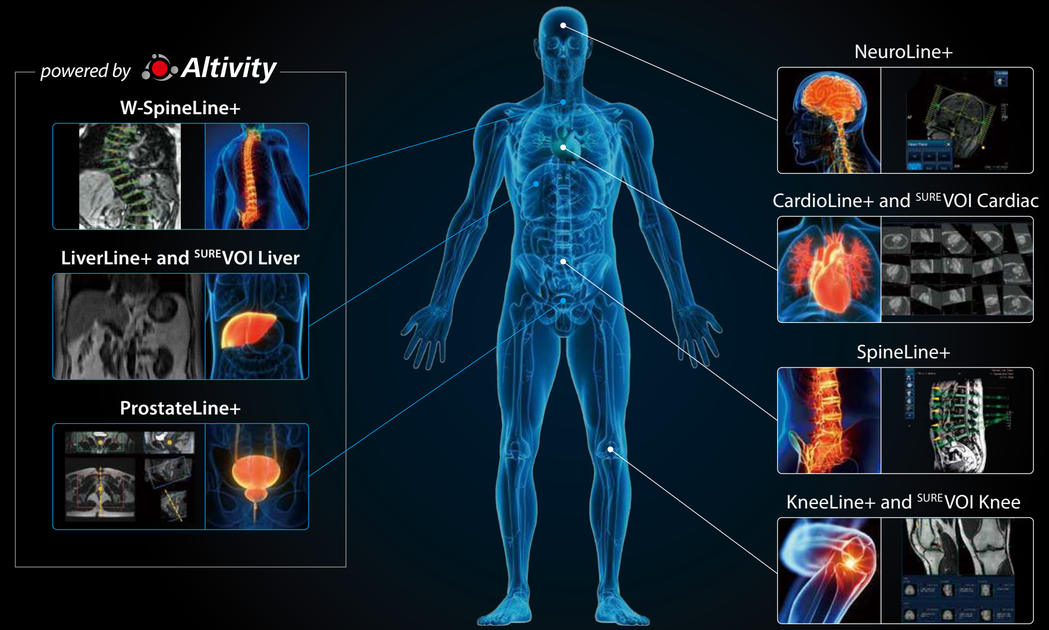
powered by **Altivity**

Ceiling Camera

Our Ceiling Camera solution transmits key information to be displayed on the Intelligent Monitor, confirms coil set-up and assists patient positioning.

Auto Scan Assist

Auto Scan Assist standardizes your workflow with automated slice alignment for a range of exams including liver, prostate and whole spine. Utilizing Deep Learning and Machine Learning based automatic recognition, productivity is advanced to enhance procedural efficiency.



Auto Scan Assist AI technology is trained in the factory. It does not continue to learn once installed at the facility.

Productivity focused technology that improves workflow and image consistency

ForeSee View

ForeSee View is an essential scan planning tool allowing you to preview slice planning in real time to help avoid time consuming re-scans. Enabling planning from edge to edge in the region you wish to image, ForeSee View is particularly useful in anatomies that can be difficult to plan such as the pancreas, the heart, orthopedic joints, tortuous vessels and ligaments, and complex post-surgery vessels and arteries.

Normal

ForeSee View

The desired cross section is displayed in real time in conjunction with the positioning operation.

See through the noise. This is intelligence.

Advanced intelligent Clear-IQ Engine (AiCE) is the world's first fully integrated Deep Learning Reconstruction technology for MRI, producing stunning MR images that are exceptionally detailed. Harnessing the enormous computational power of a Deep Convolutional Neural Network (DCNN), AiCE is trained to restore low SNR MR data to match the properties of high SNR images.

Training Phase in factory

Using high SNR images, Advanced intelligent Clear-IQ Engine (AiCE) learns to differentiate between signal and noise in low SNR images.

Low SNR | Deep Learning | High SNR

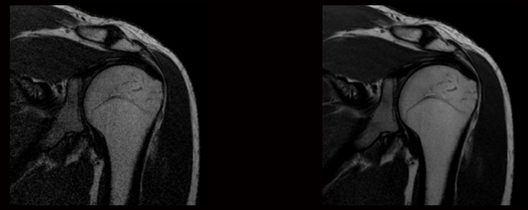
Operational Phase

Using the intelligence from the Training Phase, AiCE removes noise from images which results in higher SNR.

Data Acquisition | Deep Convolutional Neural Network | High SNR

Achieve the ideal balance between resolution and speed utilizing Deep Learning Reconstruction

Original image

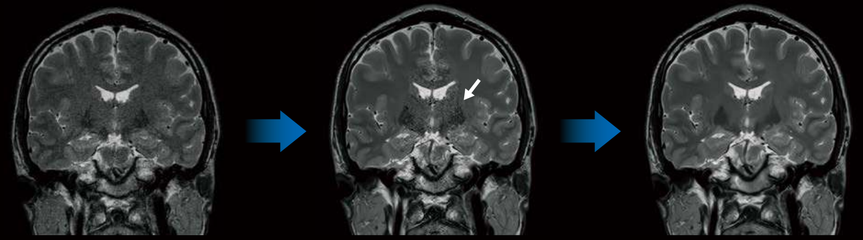


Co PDw, 0.4×0.4 mm resolution, 2 mm, 1:26

AiCE enhances parallel imaging robustness

In recent versions, AiCE noise estimation has been enhanced to allow noise to be removed from the section where g-factor was considered (white arrow).

Original image | **Conventional**



Deep Learning technology harmonizes resolution and speed

AiCE intelligently removes noise from images which results in higher SNR and enables increased resolution, and can also help save time when used in combination with many accelerated scan applications.

AiCE combines with rapid scanning techniques

In combination with unique Canon scan acceleration technologies like Compressed SPEEDER and Fast 3D mode, you have the ability to scan faster and higher resolutions and enhance SNR by removing noise during image reconstruction.

AiCE combines with Compressed SPEEDER

Compressed SPEEDER

Compressed SPEEDER + AiCE Integrated Intelligence

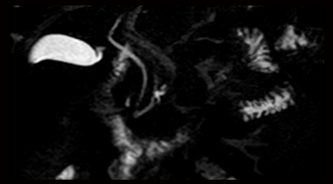
Suspected intervertebral foramen stenosis

1:48
Sg T2w, 0.58×0.58 mm resolution, 3 mm, CS ×1.8

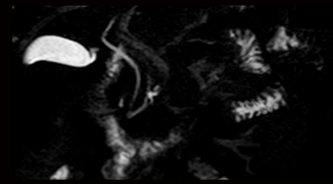
Courtesy of Fujita Health University, Okazaki Medical Center, Japan

AiCE combines with Fast 3D mode

Fast 3D mode



Fast 3D mode + AiCE Integrated Intelligence



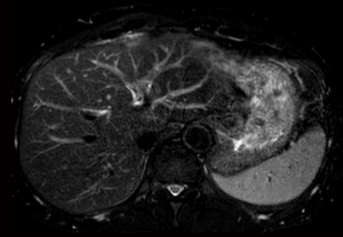
Gallbladder polyp
Pancreatic cystic lesions

0:20
3D MRCP, 1×1 mm resolution, 3.5 mm, MPR

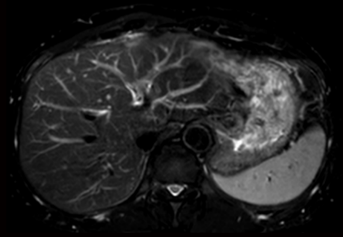
Images provided by Japanese facility

AiCE combines with SPEEDER

Compressed SPEEDER



Compressed SPEEDER + AiCE Integrated Intelligence



0:18
Ax FS T2w, 1.2×1.2 mm resolution, 5 mm, SPEEDER ×2.0

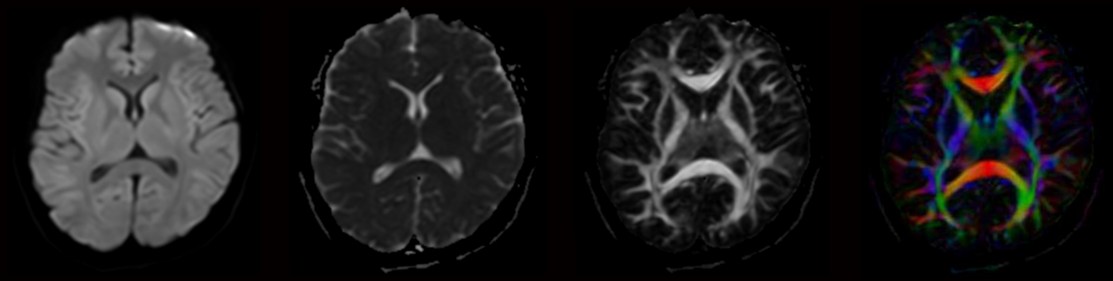
Minimize image distortion to enhance diagnostic capability

Unnecessary distortion can hide or make lesions difficult to detect, so solutions that reduce distortion are useful for diagnostics. DWI / DTI in particular are sensitive to the effects of magnetic susceptibility, with distortion appearing where the magnetic susceptibility changes. Canon's RDC DWI and DTI minimize distortion which enhances diagnostic performance in these advanced imaging techniques.

powered by Altivity

Diffusion Tensor Imaging (DTI)

DTI is an advanced MRI technique that utilizes the EPI method to visualize continuous white matter tracts running in various directions in the brain.



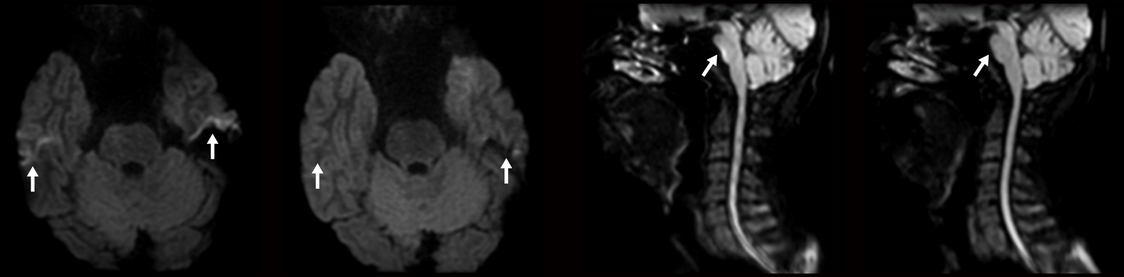
DWI ADC FA Tensor

Ax DWI / b1000, 1.88×1.88 mm resolution, 5 mm, 3:25

powered by Altivity

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.



Ax DWI / b 1000, 1.1×1.1 mm resolution, 3 mm, 4:30, Exsper ×2.0

Ax DW I/ b 1000, 1.1×1.1 mm resolution, 3 mm, 4:57, Exsper ×2.0

Sg DWI / b 500, 1.8×1.8 mm resolution, 3 mm, 2:09, Exsper ×2.0

Sg DWI / b 500, 1.8×1.8 mm resolution, 3 mm, 2:15, Exsper ×2.0

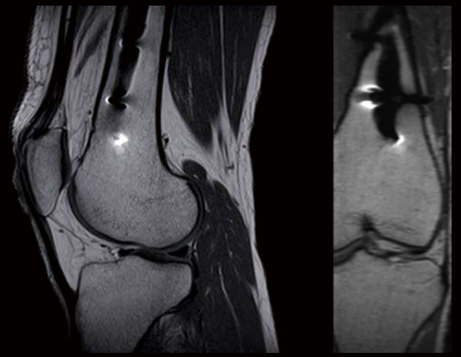
Improving imaging robustness to enhance diagnostic capability

Many scan and patient situations present challenges with motion artifacts and distortion. Even amongst these challenges, Canon technology delivers diagnostically relevant images to avoid re-scans.

metal Artifact Reduction Technique EXPansion (mART EXP)

mART EXP is 3D method to reduce in-plane and through-plane distortion artifact induced by susceptibility. Compressed SPEEDER can reduce scan time.

Conventional

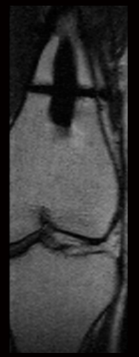


Sg PDw, 0.7×0.7 mm resolution, 2 mm

MPR Co

mART EXP

Sg PDw, 0.7×0.7 mm resolution, 2 mm



MPR Co

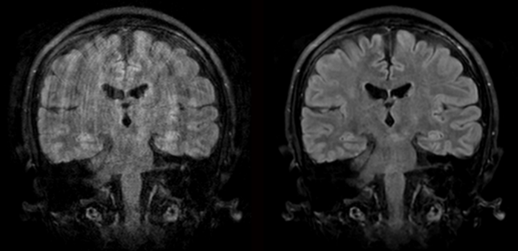
powered by Altivity

Iterative Motion Correction (IMC)

IMC is a motion correction technology for motion artifacts caused by sporadic movements. IMC comprises two main steps: shot rejection and image reconstruction.

Conventional

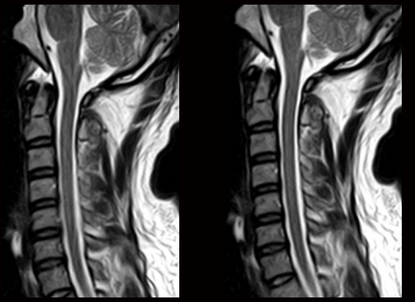
IMC + AiCE Integrated Intelligence



Co FLAIR, 1.0×1.0 mm resolution, 4 mm, 3:51

Conventional

IMC + AiCE Integrated Intelligence



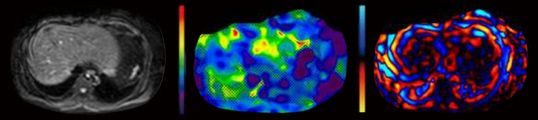
Sg T2w, 0.96×0.96 mm resolution, 3 mm, 3:48

Quantifiable imaging to enhance diagnostic capability

Quantitative imaging techniques provide a wide range of options for referring physicians and staff. New techniques like MR Elastography and Fat Fraction Quantification (FFQ) for liver staging and quantification, and contrast free Arterial Spin Labeling increase the imaging tools available for imaging various disease sets that were previously handled in other imaging modalities.

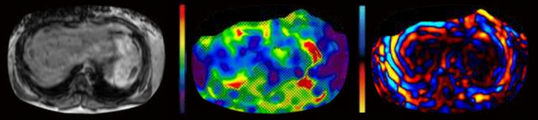
MR Elastography (MRE)

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

SEEPI, 3.6×3.6 mm resolution, 8 mm, 0:11



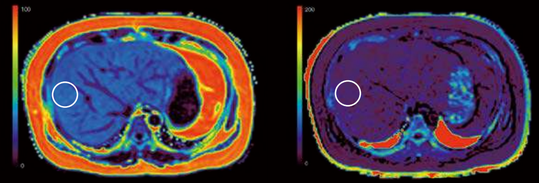
Magnitude image | Stiffness map | Wave images

FE2D, 3.6×3.6 mm resolution, 8 mm, 0:13×4

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 held exam, provide quantitative maps of the liver to measure proton density fat fraction (PDFF) and R2*.

Fatty liver case

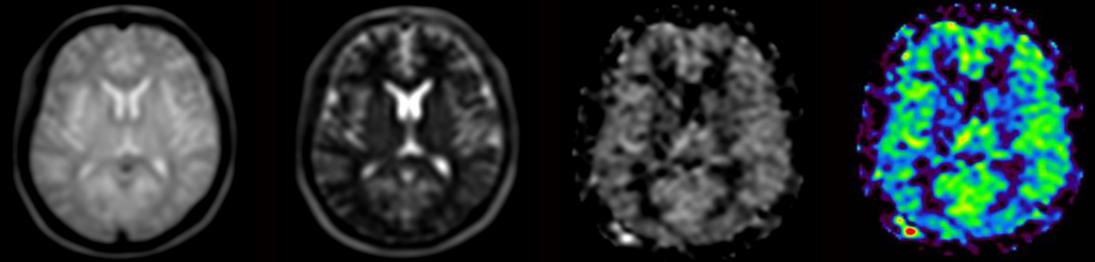


Fat Fraction: 28.42% | R2* value: 25.74Hz

Ax FE3D, 3.3×3.3 mm resolution, 7 mm, 0:22

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.



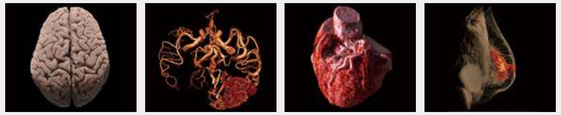
PD weighted | Label image | Perfusion weighted | Cerebral Blood Flow

Ax pCASL, 2,0×2.0 mm resolution, 6 mm, TI 1800ms, 4:33

Intelligent advanced post processing

Global Illumination

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



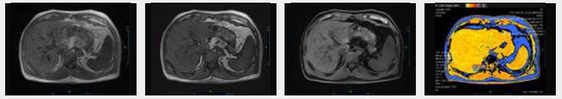
Wall Motion Tracking

Multi-Chamber Wall Motion Tracking enables to delineate of the inner and outer walls of both the atria and ventricles, providing quantitative information regarding cardiac function and strain analysis.

Short axes view (LV) | Short axes view (RV) | 4 Chamber view | Bull's Eye | Ejection Fraction

MR Metabolic

The MR Metabolic application was designed for the assessment of metabolism in cancer, diabetes, obesity, liver diseases and other disorders, by measuring the Hepatic Fat Fraction (HFF), through a non-invasive method.



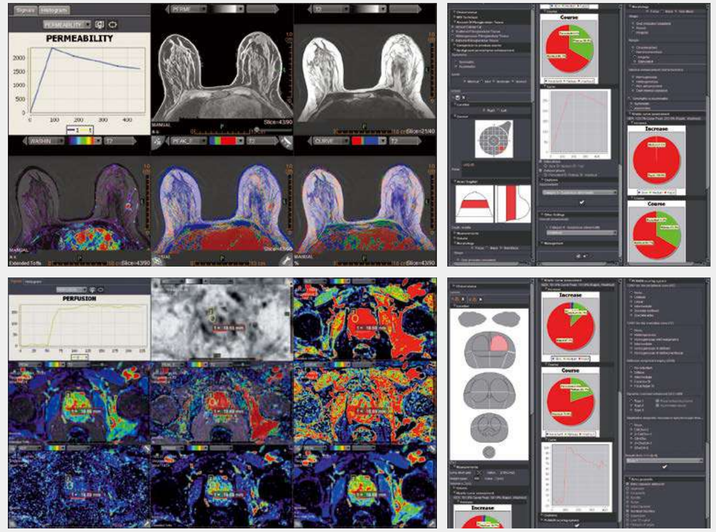
These images were acquired on a 3T system

Olea medical
Improved diagnosis for life™

Dedicated automatic reporting

Stroke, breast (BI-RADS®) and prostate (PI-RADS® v1 and v2) automatic compliant reports.

Olea medical
Improved diagnosis for life™



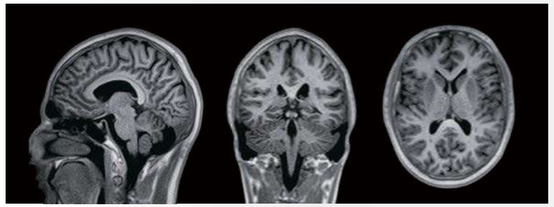
Patient friendly features putting your patients first

Pianissimo and Pianissimo Zen

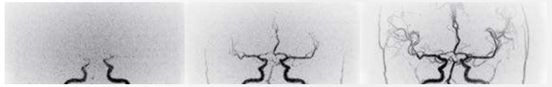
Pianissimo technology significantly reduces the noise in and around the MRI environment for every patient, every sequence, every time. And Pianissimo Zen quiet sequences further reduce noise to just above ambient noise level, making exams even more comfortable and easier to complete.

Quiet examination

Vantage Orian's mUTE[2] application suppresses high-speed gradient field switching, making it possible to provide even quieter scanning.



3D Sg T1w Silent 1 mm isotropic TE = 0.12 ms | Co MPR | Ax MPR



Brain

1 Depending on the condition of usage and examination.
2 mUTE : minimized acoustic noise
* Pianissimo is available on XGO version only, Pianissimo Σ is available on STD version

Up To 99%[1] Noise Reduction

MR Theater and wide bore

The wide bore patient aperture and in-bore immersive virtual experience enhance patient comfort. The MR Theater encourages patients to relax and stay still, enabling clinicians to produce, high-quality imaging.

LED ring is available on XGO version only

Enhance productivity through simplified cleaning

As procedure numbers increase so does the time required for cleaning. The new gloss coating allows for easier and faster cleaning which saves time between procedures, allowing you to quickly proceed to the next patient.

Satisfy hospital compliance with disinfection and sterilization features

Easy to clean surfaces and reduced system touch points simplify the cleaning process. With easy to clean and comfortable pads for the patient and hands-free table operation you have a modern system that helps to meet hospital and disinfection requirements.
In addition, the convenient the utility paper holder makes it quick and easy to change the paper on the table between patients.

Patient pads

Utility paper holder

Foot operation

Intelligent Monitor

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

Dockable Table

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 25 m^2 footprint that excels in the 1.5T wide bore market.[3]

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

3 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.

4 For Saturn X Gradient, 80 kVA is required.

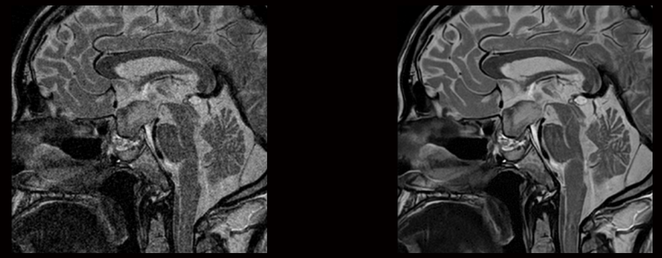
powered by Altivity

AiCE for Brain

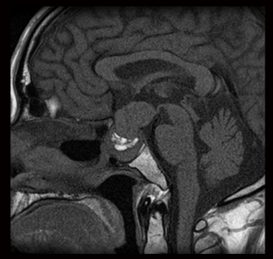
Postoperative follow-up for pituitary adenoma

Original

AiCE Integrated Intelligence



Sg T2w, 0.6×0.6 mm resolution, 1.5 mm, 2:18



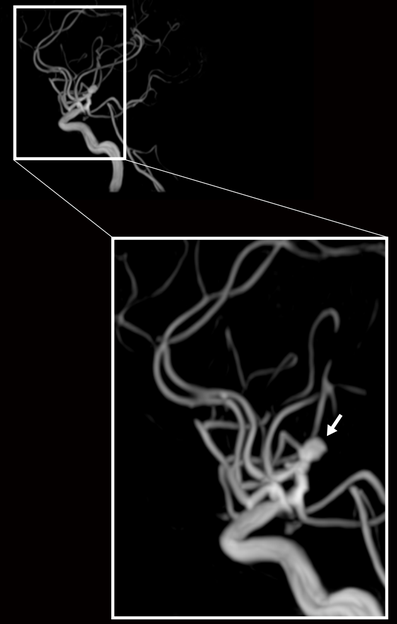
Sg T1w, 0.6×0.6 mm resolution, 1.5 mm, 2:13

Images provided by Japanese facility

Fast 3D for MR Angiography

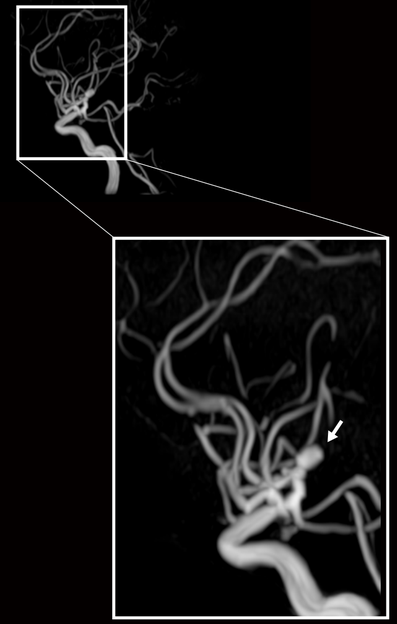
Left MCA aneurysm

Original



MRA3D, 0.64×0.64 mm resolution, 1.2 mm, 4:44

Fast 3D



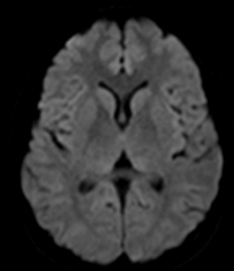
MRA3D, 0.64×0.64 mm resolution, 1.2 mm, 3:40

Images provided by Japanese facility

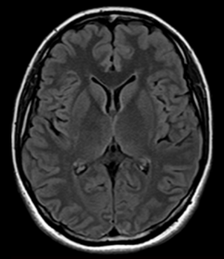
AiCE for Brain

Cerebral infarction

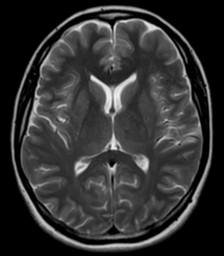
Total scan time
4:30



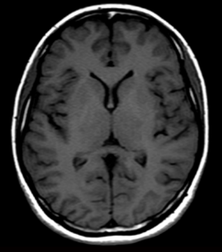
Ax DWI b1000, 1.4×1.4 mm resolution, 5 mm, 0:29



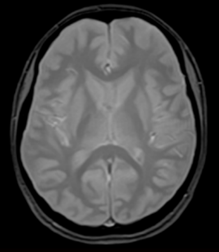
Ax FLAIR, 0.8×0.8 mm resolution, 5 mm, 1:40



Ax T2w, 0.8×0.8 mm resolution, 5 mm, 0:37



Ax T1w, 0.7×0.7 mm resolution, 5 mm, 1:03



Ax T2*w, 1.4×1.4 mm resolution, 5 mm, 0:41

Images provided by Japanese facility

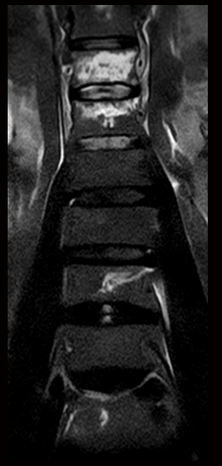
AiCE for L-Spine

Suspected compression fracture / Transverse process fracture

Sg T2w,
0.78×0.78 mm resolution,
3 mm, 1:28, CS ×2

Sg T1w,
0.92×0.92 mm resolution,
3 mm, 2:44, CS ×2

Co T2w,
0.78×0.78 mm resolution,
3 mm, 2:00, CS ×2

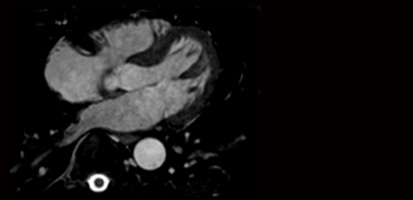


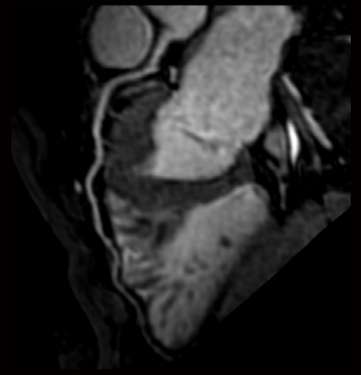
Co STIR,
0.84×0.84 mm resolution,
3 mm, 2:10, CS ×2.4

Courtesy of Fujita Health University, Okazaki Medical Center, Japan

Fast 3D for Coronary

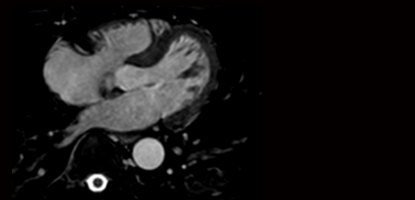
Conventional

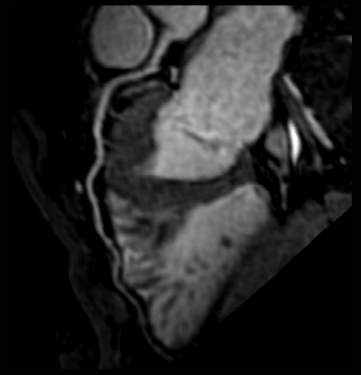




SSFP3D, 1.2×1.2 mm resolution, 1.7 mm,
7:13

Fast 3D mode



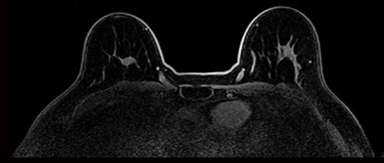


SSFP3D, 1.2×1.2 mm resolution, 1.7 mm,
3:37

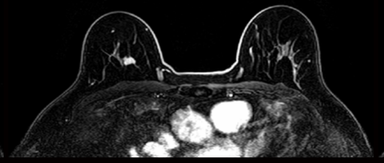
AiCE for Breast

AiCE Integrated Intelligence

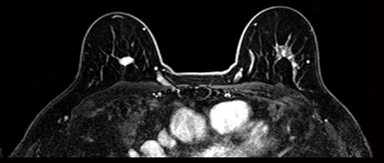
Suspected fibroma



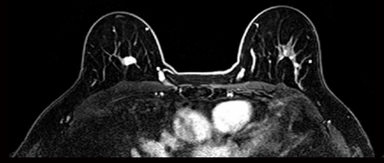
Pre



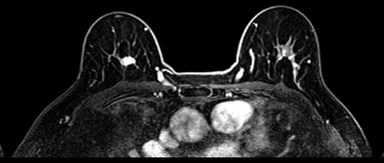
Dyn1



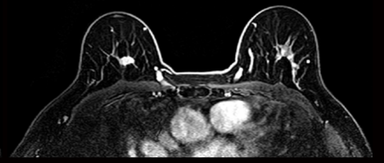
Dyn2



Dyn3



Dyn4



Dyn5

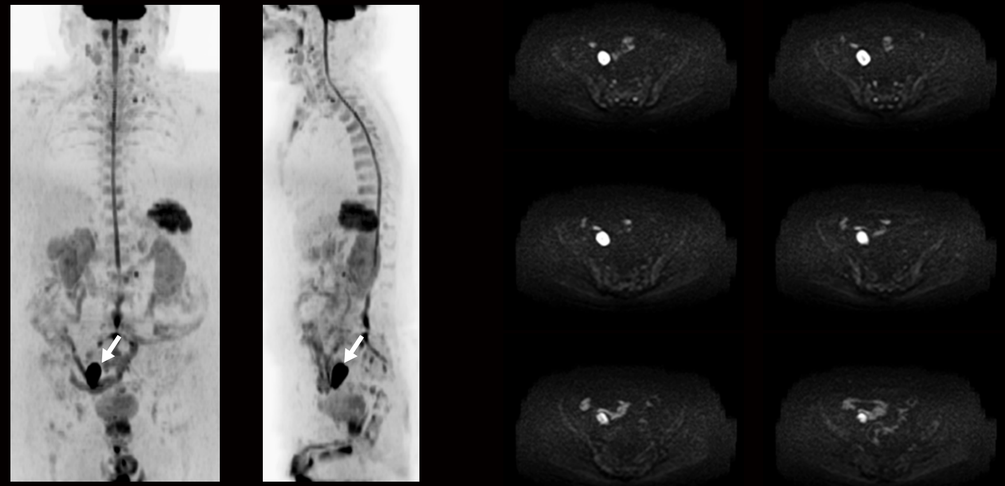
Dynamic Study
FFE3D, 0.6×0.6 mm resolution, 2 mm, 1:02 / phase

Courtesy of Fraternity Memorial Hospital, Japan

AiCE for Whole body

AiCE Integrated Intelligence

Suspected metastatic lymph node



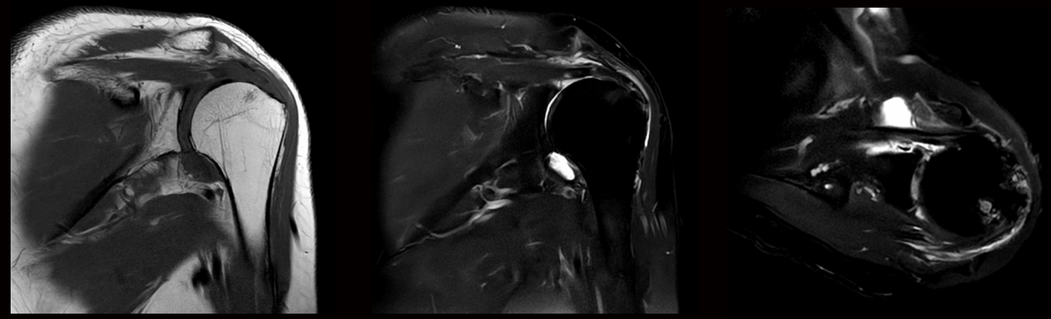
Ax DWI / b 800, 3.2×3.2 mm resolution, 5 mm,
0.59 × 3 stations

Images provided by Japanese facility

AiCE for Shoulder

AiCE Integrated Intelligence

Left rotator cuff tear



Co T1w, 0.36×0.36 mm resolution, 3.5 mm,
2:48

Co FS T2w, 0.44×0.44 mm resolution, 3.5 mm,
1:59

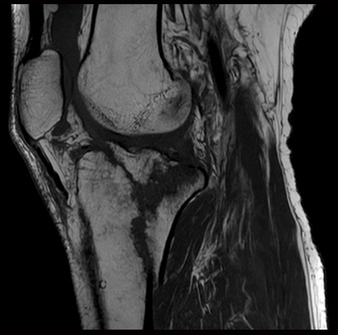
Ax FS T2w, 0.44×0.44 mm resolution, 3.5 mm,
2:48

Courtesy of Kyoto Shimogamo Hospital, Japan

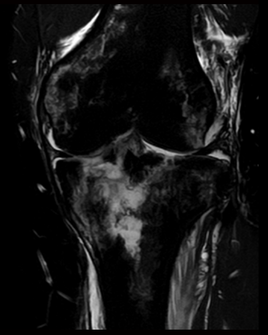
AiCE for Knee

AiCE Integrated Intelligence

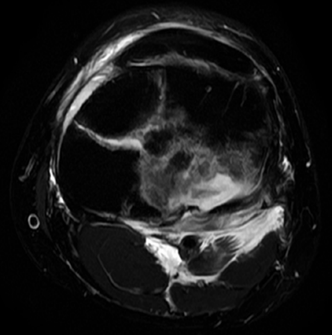
Tibial plateau fracture



Sg T1w, 0.6×0.5 mm resolution, 3.5 mm,
2:44



Co FS T2w, 0.6×0.5 mm resolution, 3 mm,
3:18



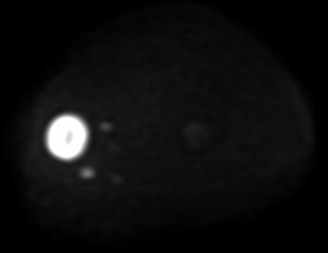
Ax FS T2w, 0.7×0.5 mm resolution, 5 mm,
3:22

Courtesy of Kyoto Shimogamo Hospital, Japan

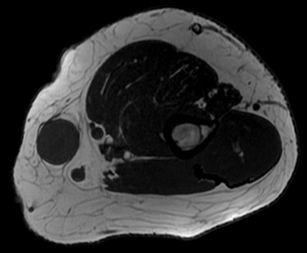
AiCE for Arm

AiCE Integrated Intelligence

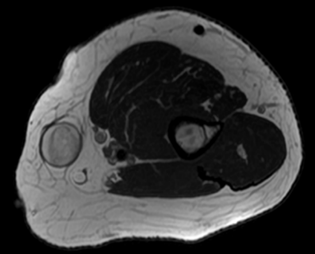
Suspected neurogenic tumor

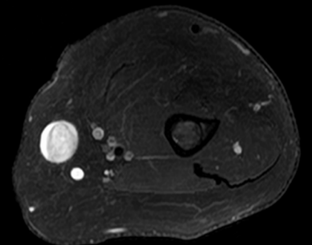


Ax DWI b1000, 1.8×1.8 mm resolution, 3 mm, 3:56
Exsper ×3



Ax T1w, 0.44×0.44 mm resolution, 3 mm, 3:08





Ax T2w WFS, 0.6×0.6 mm resolution, 3 mm, 2:55

Courtesy of Moriguchi Keijinkai Hospital, Japan

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- Enable correct patient positioning and coil set-up with Ceiling Camera and Intelligent Monitor
- Efficiently plan with ForeSee View and automate routine sequences with Auto Scan Assist
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