

HITACHI
Inspire the Next



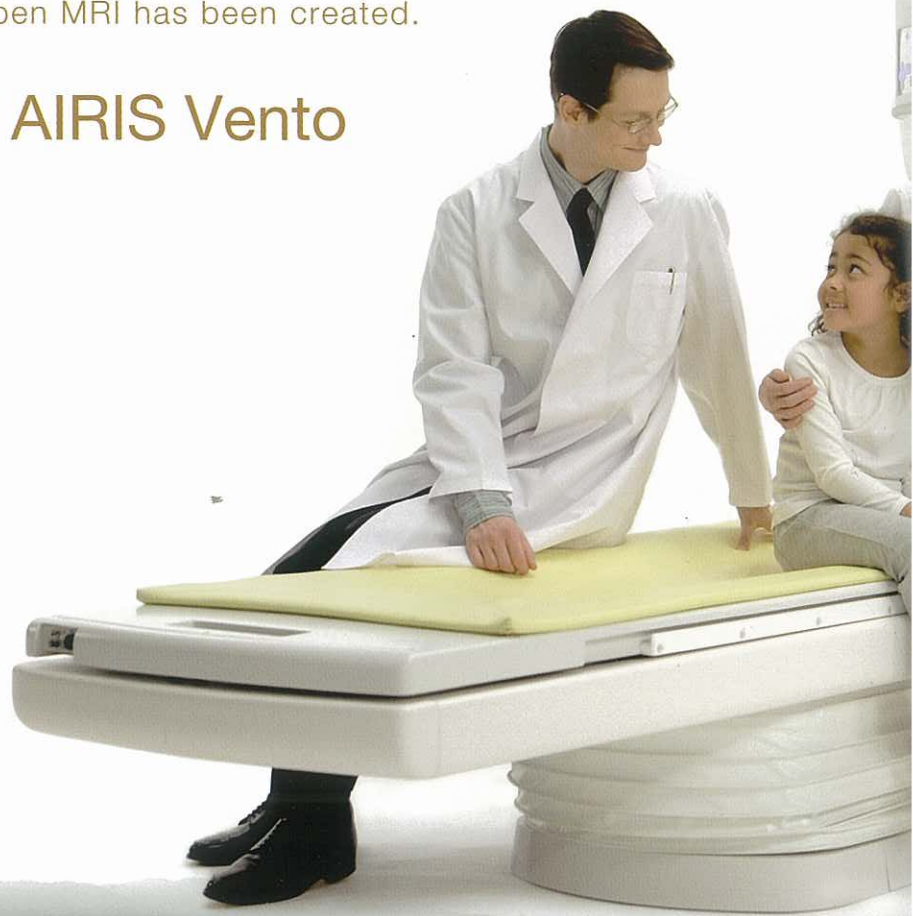
AIRIS Vento
Advanced Open MRI

Enhanced capabilities are combined with sophisticated Open MRI technologies.

Operability, image quality, amenity, leading-edge imaging functions; such functions indispensable to MRI are being improved upon while condensing these elements into a more compact unit.

With the control of energy consumption, there is a suppression of operating costs that can also take into consideration the environment. This examination equipment is friendly to examiners, to those being examined, and to the earth as well. A new value of Open MRI has been created.

The creation of AIRIS Vento



Advanced Ope



[High performance applications]

The latest application software developed with the high field MRI "Echelon" is now realized through the Open MRI system.

[Superb image quality]

The AIRIS Vento has a high image quality that distinguishes it from existing Open MRI systems. The system makes full use of the unique imaging technologies of Hitachi for realizing Open MRI which provides high quality images.

[Sophisticated operating environment]

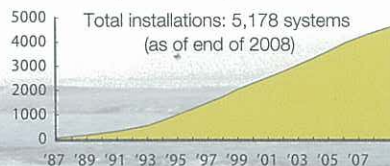
Capable of simultaneously displaying a large quantity of information. Able to provide at a glance recognition of necessary images. In seeking greater operability the AIRIS Vento has increased the ease of use.

[Sophisticated open architecture]

A patient-friendly design created by fully seeking amenity. Compact design that is less intimidating. A wide and large aperture that has a less obstructive feeling. Beautiful design unusual with MRI has been derived from the particular concern of Hitachi to make it gentle.

Total 5,000 Hitachi MRI systems delivered worldwide

In 1987 the permanent-magnet MRI was released for sale. In 1995 the AIRIS series was released, becoming the pronoun for Hitachi Open MRI system. The Open MRI has extended its market in Japan, U.S.A. and also worldwide due to its highly evaluated performance. From hereon Hitachi Open MRI and its customers will proceed on together.



Open MRI Systems

ADVANCED IMAGING CAPABILITIES

For even higher definition imaging

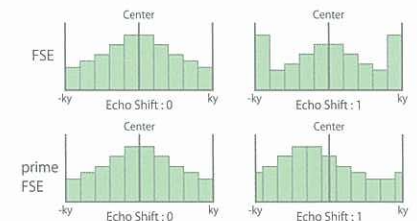
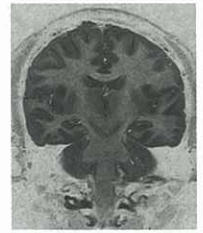
High definition developed for a

A high image quality has been developed that distinguishes the AIRIS Vento

[High-performance applications]

Prime FSE*

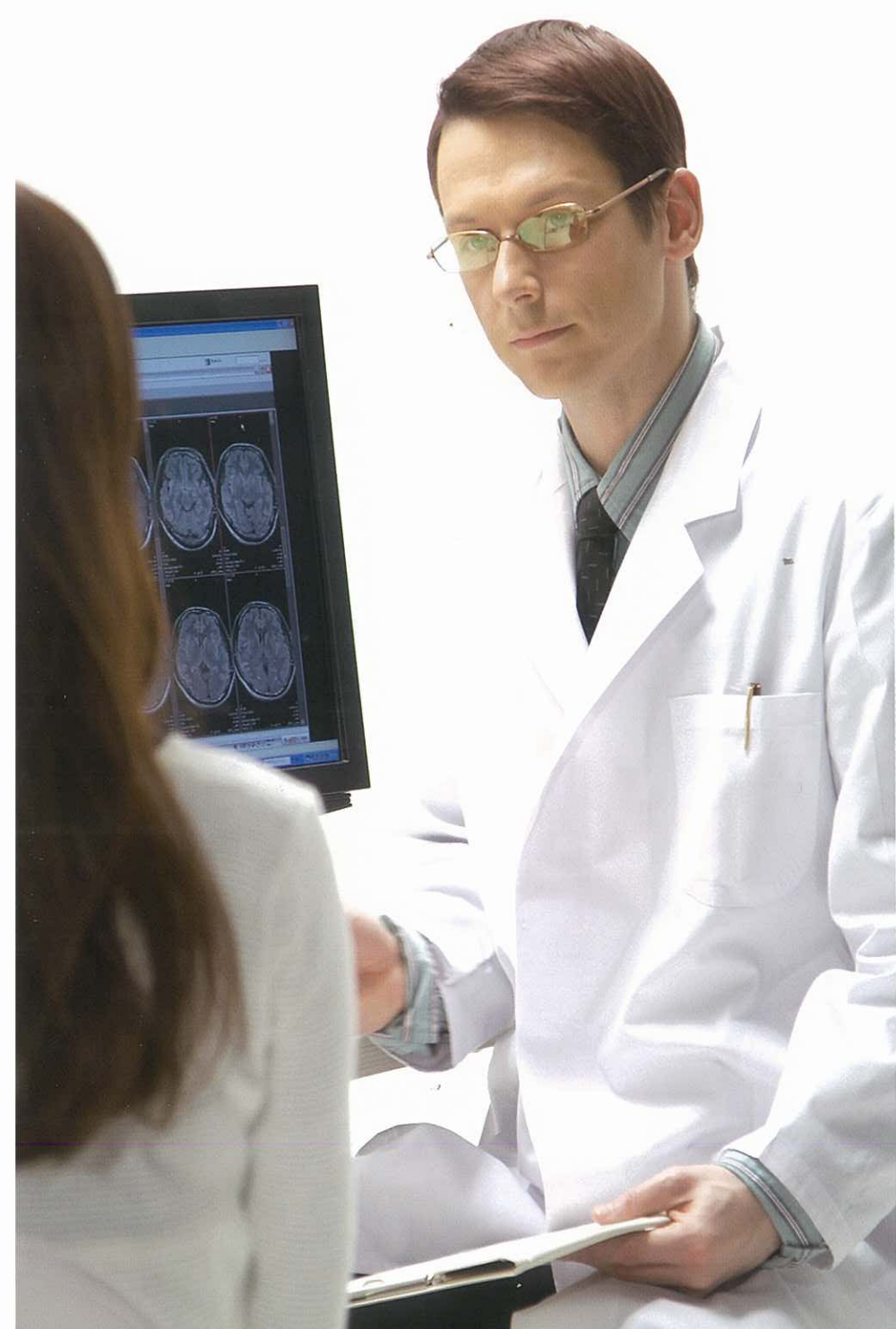
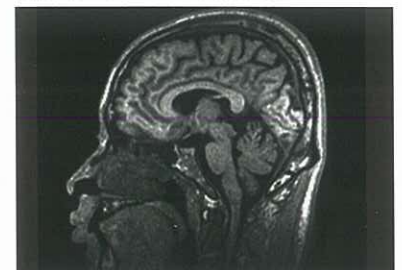
With the AIRIS Vento, it has been possible to incorporate the prime FSE. The prime FSE not only optimizes echo arrangements for image quality improvement but also parameter settings that were complex tasks with the existing FSE sequence can be carried out similar to the SE sequence.



In the existing FSE, necessary echoes were arranged in the center of the k-space, but as remaining echoes were not optimized, truncation artifact could readily occur. The prime FSE not only suppresses truncation artifact but also allows free setting of the effective TE.

3D GEIR*

3D GEIR is a technique in which GrE is combined with IR pulses. This is a sequence with which the volume data of T1-weighted images stronger than usual ones can be obtained in a short time. There is a probability that neuron disease applications will be added.



Imaging technology for precise diagnosis in a short-time.

Achieved by making full use of the new technologies developed by Hitachi from existing Open MRI systems.

[Superb image quality]

High resolution images

The Hitachi Open MRI has realized an image reconstruction matrix of 2048x2048. The system can work for high-definition imaging to provide clinical images with higher reliability.



SuperShim*

SuperShim has enabled higher order shimming of static magnetic field disorder which could not be sufficiently compensated by the existing first order shimming. Improved homogeneity of the magnetic field has allowed application of the CHESS method sequence which has previously been a problem.



Solenoid type receiver coils

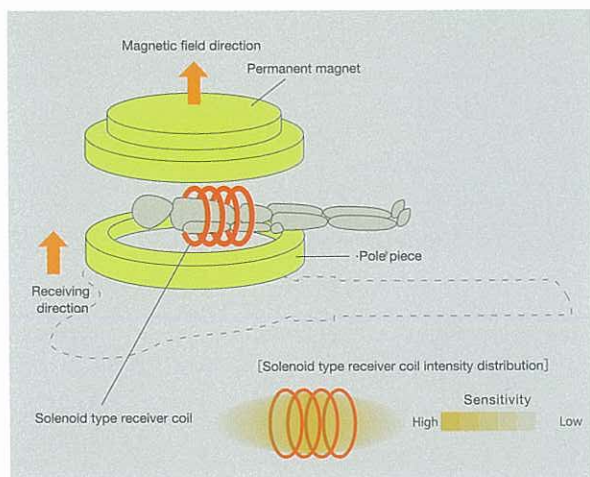
As a matter of principle the central area has the highest sensitivity in a receiver coil. With the solenoid type receiver coils, since it is possible to position the imaging area in the center of the receiver coil, the coil can receive MR signals efficiently so as to acquire images with high SNR. The solenoid type receiver coil is one of the key points of the Open MRI.



VR (Volume rendering)* image
VR of 3D images such as MRA and MRCP helps understand anteroposterior relations. Since this rendering process is done on the console of AIRIS Vento, examination can be conducted efficiently.

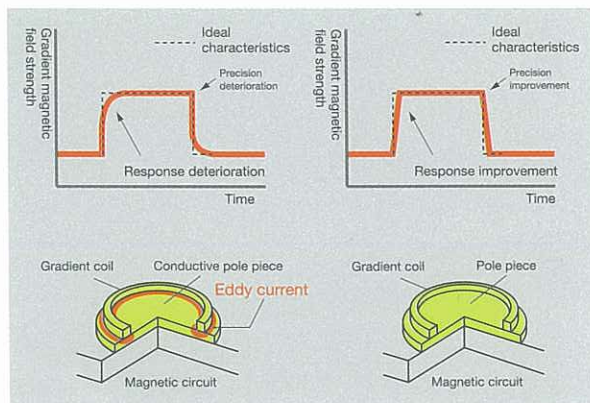
Vertical magnetic field method

Open MRI adopts the vertical magnetic field method. Since the vertical magnetic field method allows the use of solenoid type receiver coils, MR signals higher than those of horizontal magnetic field MRI system can be acquired as long as magnetic field strength is the same.



High performance magnetic circuit + ECC function

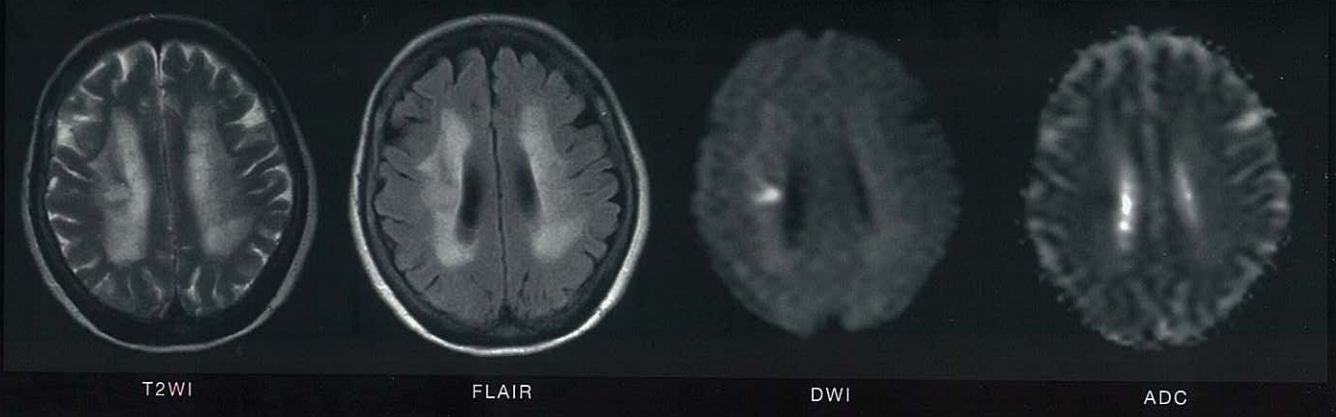
Eddy current suppression is crucial for stable and high-quality images with MRI. The disturbed wave form of the gradient magnetic field induced by an eddy current causes image distortion resulting in image deterioration. Hitachi has not only applied eddy current suppression technology to the magnet itself, but also incorporated an ECC (Eddy Current Control) function which predicts and suppresses the generated eddy current.



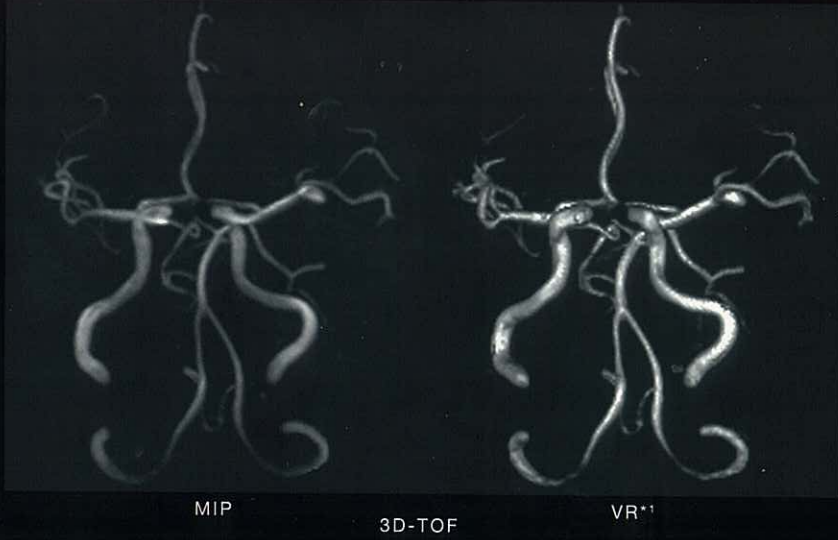
ECC (Eddy Current Control)

ADVANCED IMAGING CAPABILITIES

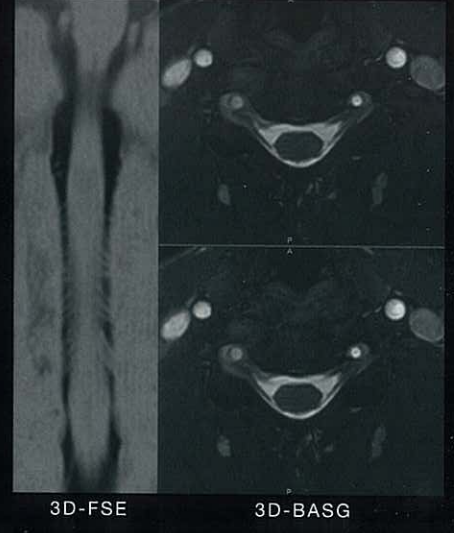
Acute cerebral infarction



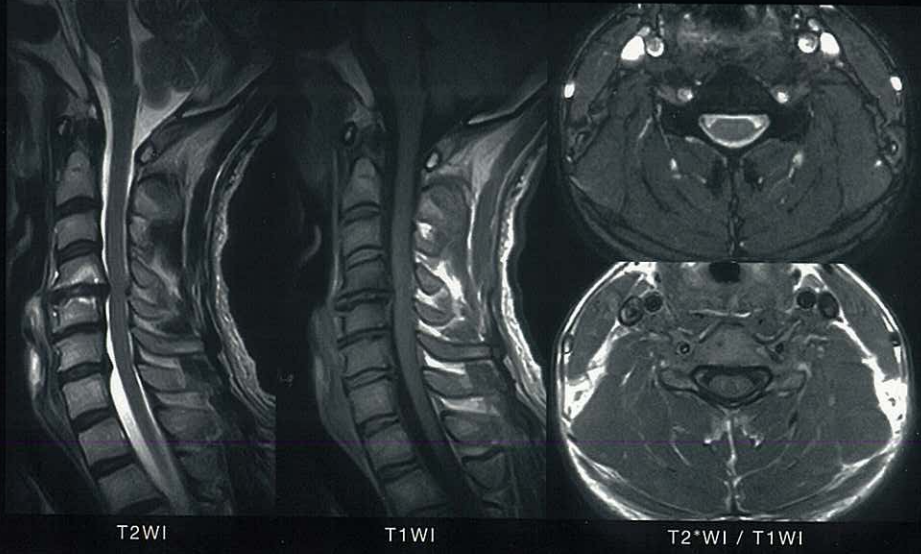
MCA aneurysm



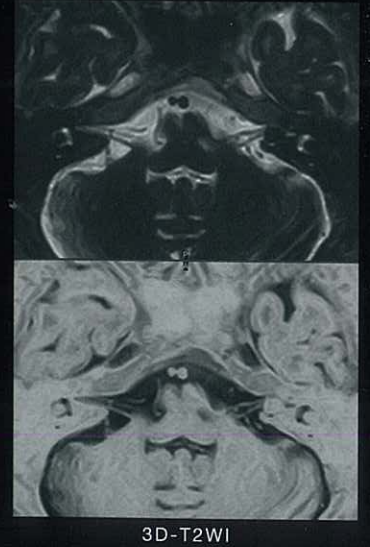
Myelography



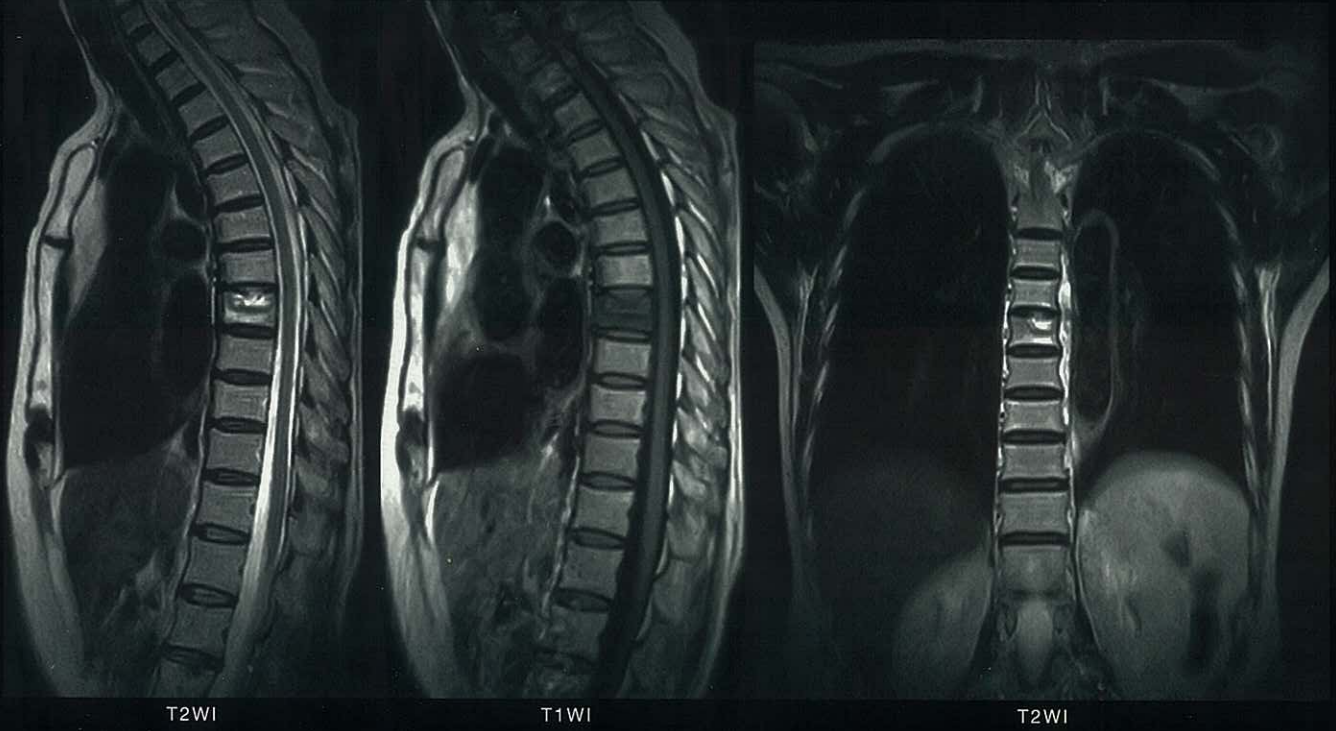
Cervical spondylosis



Acoustic nerve tumor



Thoracic compression fracture



T2WI

T1WI

T2WI

Lumbar disc herniation



T2WI

T1WI

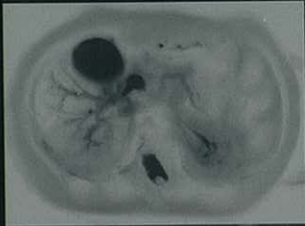
Myelography

Curved MPR image

T2WI

ADVANCED IMAGING CAPABILITIES

Pancreatic cancer



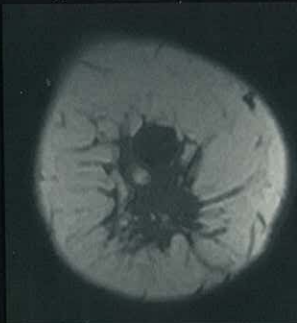
MRCP

Ureterolith



Urography

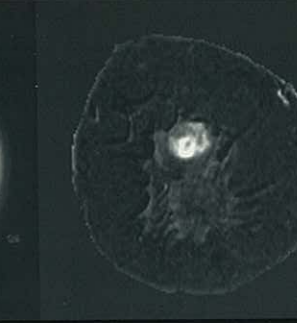
Benign lobate tumor



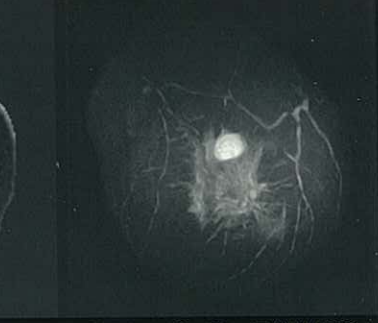
T1WI



ContrastT1WI



Subtraction

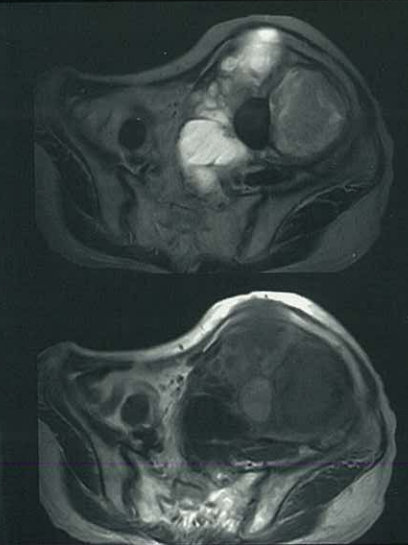


ContrastFatSep T1WI MIP

Dermoid cystoma



T2WI



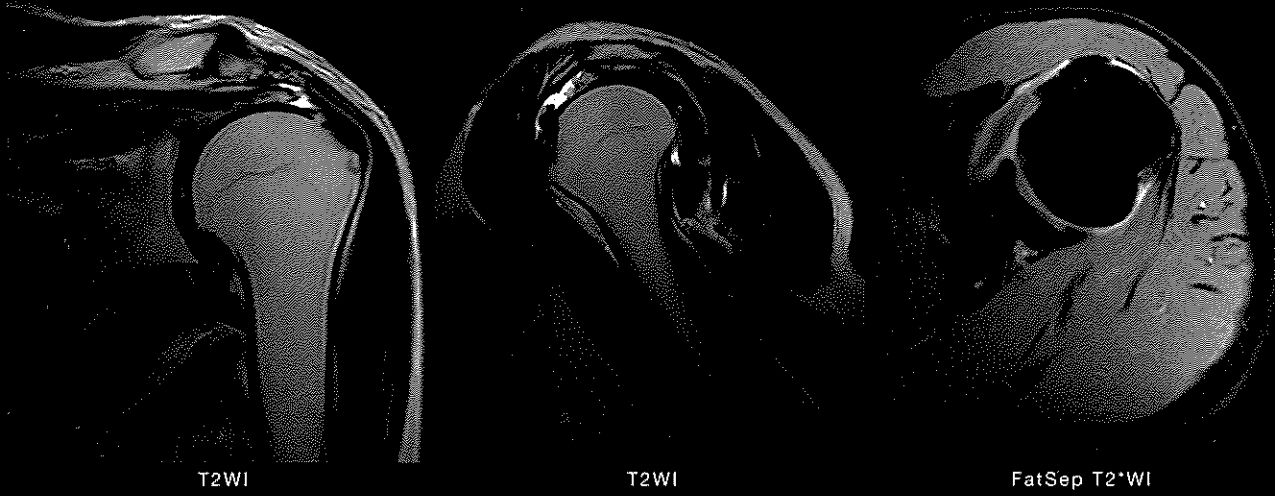
T2WI / T1WI

Renal cyst



FatSep T2*WI

Rotator cuff injury



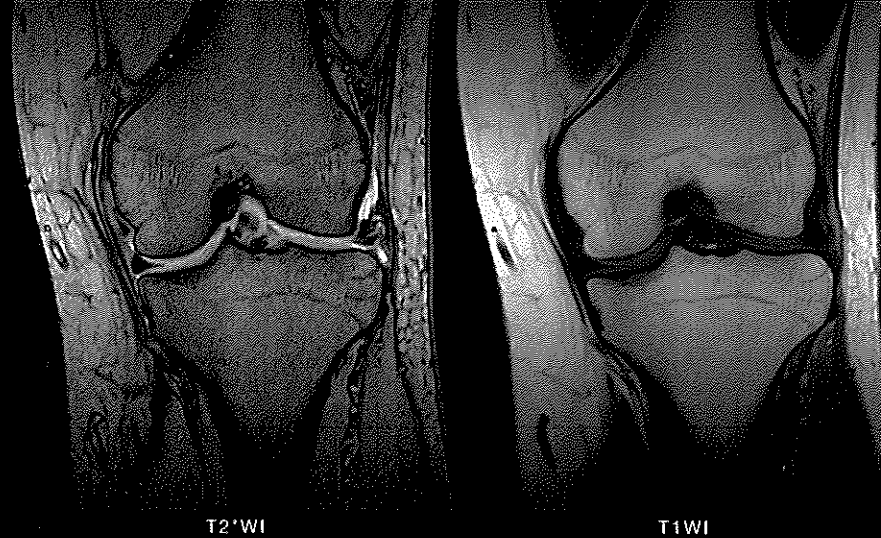
Chronic articular rheumatism



Lisfranc articular dislocation fracture



Meniscus injury



SOPHISTICATED OPERATION ENVIRONMENT

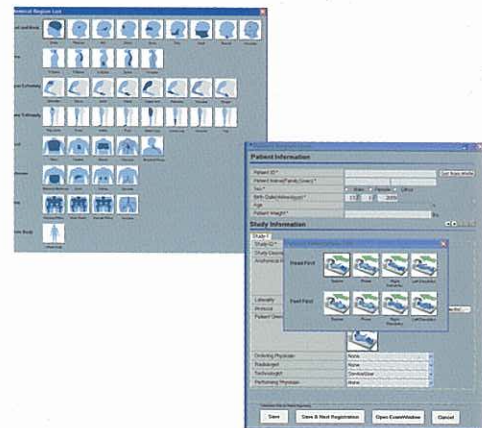
For further operability improvement

Smooth operation and an improved

AIRIS Vento adopts a large screen
Capability of confirming the

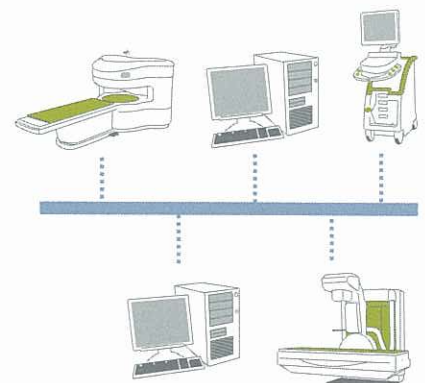
User-friendly GUI

AIRIS Vento has adopted the same system software as used by ECHELON, a high field MRI. The intuitively understandable GUI (Graphical User Interface) and DICOM MWM* - which provide for simplified entry of data of the examinee have been adopted.



DICOM capabilities

Networking inside and outside of hospitals is going on year by year. AIRIS Vento incorporates the DICOM interface as a standard feature. In addition, the system is compatible with the DICOM MWM standard*1, CPI standard*1, SWF standard*1 and PIR standard*1.



Realized by adoption of a large screen monitor interface.

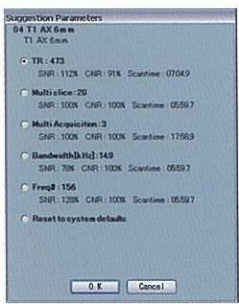
Monitor for displaying necessary information in one screen view.

Examination status at a glance allows for higher workflow efficiency.



Parameter guidance function

This function provides several parameters which can automatically be substituted when it is necessary for there to be a change in the parameters for the control of image conditions.



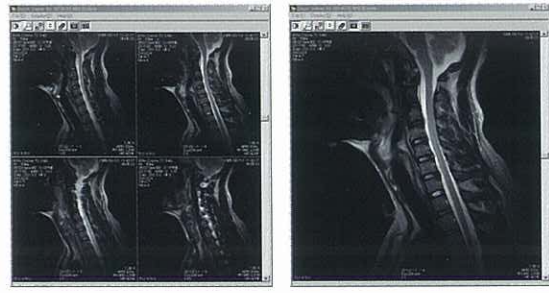
Reshuffle of protocols

Advance registration of routine protocols is possible. Further, in cases where protocol is changed due to the condition of the examinee, an alteration to the protocol can also be made by drag and drop.



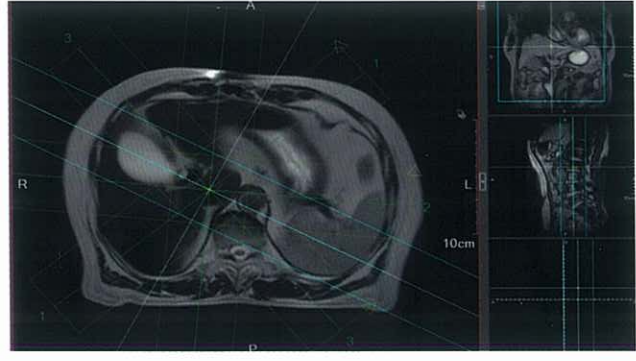
IHE PDI function*

ARIS Vento is compatible with the IHE PDI*1 standard. It permits an exchange of information with other systems which are in compliance with the PDI standard. In addition, on the written CD-R, the simplified display software*2, which is compatible with Windows PCs, is also written simultaneously.



Radial Stack

Radial Stack allows settings of radially positioned slice planes. Compared to MPR, Radial Stack enables faster acquisition of 2D images without blur peculiar to MPR.



SOPHISTICATED OPEN ARCHITECTURE



For further pursuit of amenity

Amenity condenses the possibilities for

A compact design which is less
Open architecture gives not only
merits for taking care of small

Soft and rounded appearance

Appearance design created from
the patient's point of view with the
bright color helps patients feel at
ease during the exam.

Soft Sound feature

Acoustic noise of the permanent
magnet MRI is comparatively quieter
than that of the superconductive
magnet MRI. Patients feel comfort
and it helps the operator acquire
clear images steadily and reduces
repeat scan.

Foot switch

The foot switch allows vertical and
horizontal movements of the patient
table. This permits the hands of the
operator to remain free for taking
closer care of patients.



n compact design extends Open MRI.

Intimidating. A wide aperture opened in the right and left directions.

It provides a feeling of security to the persons who feel uneasy with closed places, but it has considerable space for children and elderly patients and securing space for contrast medium injection.

Lateral slide

With AIRIS Vento, the table can move laterally inside the gantry, allowing for areas far away from the body axis such as the shoulder and knee to be brought to the imaging center.



Minimum table height

The table can be lowered to 450mm allowing small children and elderly patients to get on and off the table with less load. Vertical movements are also motor-driven.



STABLE AND RELIABLE

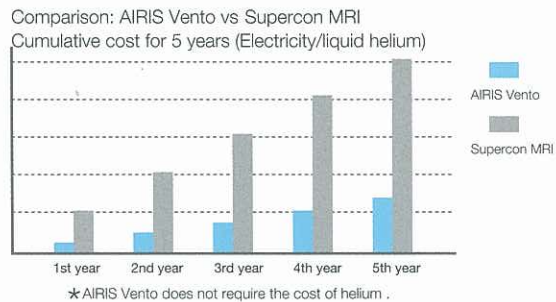
Smooth running and reliability

Permanent magnet MRI

Permanent magnet is strong against secular change and so its field strength hardly changes. Since the mechanism to maintain the magnetic field - which is indispensable with superconductive magnet - is not required, stable running is secured.

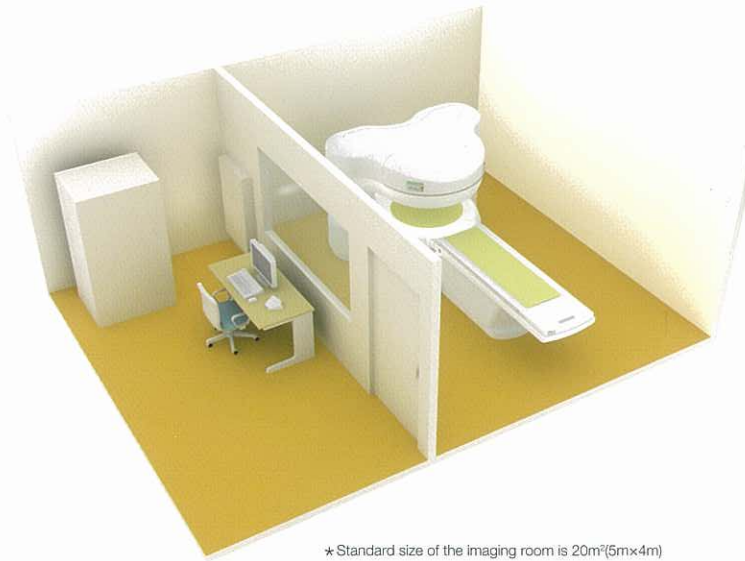
Running cost

Since AIRIS Vento can run with a small power source facility, the initial facility investment can be kept to a minimum. Also, the small electricity consumption enables the keeping of monthly running costs to a low level.



Compact system configuration

A small leakage magnetic field allows making the examination room itself compact and the absence of a machine room results in effective use of the site within the facility.

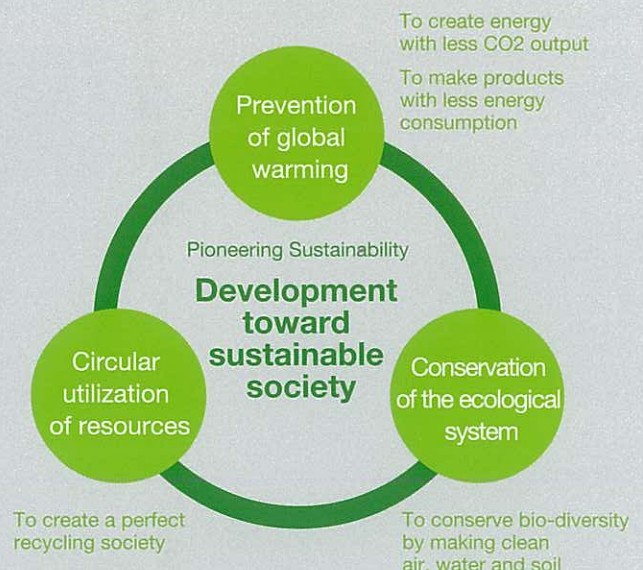


★ Standard size of the imaging room is 20m²(5m×4m)
★ May vary depending on environment of the site.

Environmental vision 2025

The Hitachi Group established the 'Environmental Vision 2025' to protect the global environment and help achieve a more sustainable society.

The three important pillars include global warming prevention, resource recycling and ecosystem conservation. The 'Environmental Vision 2025' underscores the Hitachi Group's commitment to promoting global production aimed at reducing environmental impact throughout the product's lifecycle for protecting the environment and contributing to society.



are also the advantages of Open MRI.

Sentinel

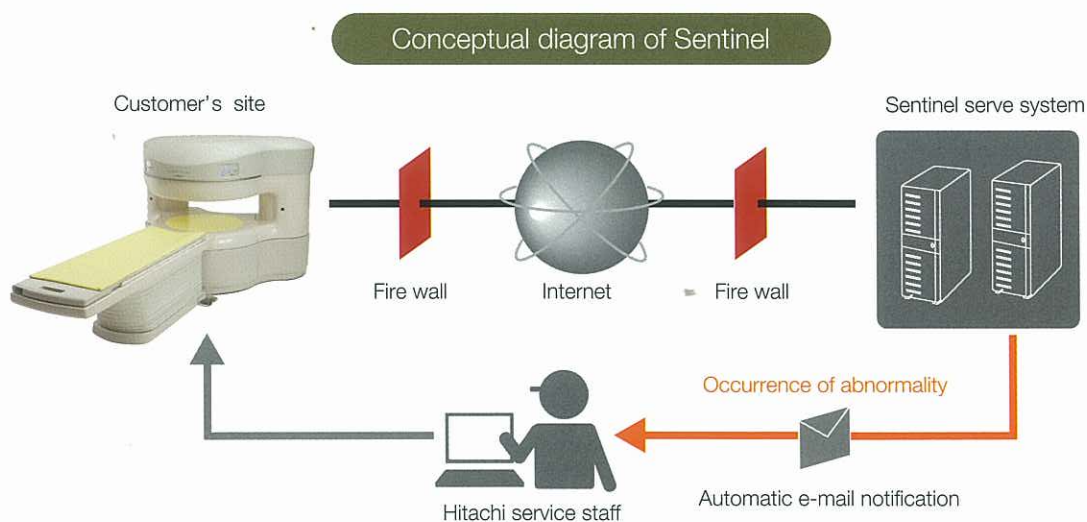
AIRIS Vento is compatible with Hitachi's customer support system, Sentinel*.

Sentinel is a system which observes the operational status of your MRI system to support stable use.

AIRIS Vento is able to acquire information about its operational status, and the information is sent to and archived in the Sentinel server at Hitachi. If abnormalities are detected, notifying e-mails are sent to the service staff to prompt appropriate action. Long-term operational status can be confirmed using accumulated information organized in a chronological order.

*Users are required to set up the network environment compatible with the service.

The contents of the service may vary depending on the extent of contractual coverage.



System status screen



AIRIS Vento
Advanced Open MRI

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- "Sentinel" is a registered trademark of Hitachi Medical Corporation in Japan.
- Specifications and physical appearance may be changed without prior notice.



Hitachi Medical Corporation
Medical System Operations
Group, Kashiwa has established
and maintains a quality
management system according
to ISO 9001, ISO 13485.



Hitachi Medical Corporation,
Medical System Operation
Group, is certified as complying
with the International
Environmental Management
System (ISO 14001).

Hitachi Medical Corporation

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