

The in-house dedicated Vet MRI





Welcome to the world of Vet-MR

The Innovation in imaging Pets:

- > Why Vet-MR
- > Vet-MR: the reasons for success
- > Easy MRI

With more than twenty years of experience in MRI, Esaote, the leading international corporation of diagnostic imaging, presents Vet-MR, an MRI system uniquely designed to bring the diagnostic excellence into the Veterinary world.

Vet-MR, which is specifically suitable for imaging small animals, is the result of attention to details in designing magnet, coils and electronic components, merging in a high performance MRI system capable of providing high quality MRI to your fingertips also thanks to its remarkable cost effectiveness and ease of use.





Welcome



Why Vet-MR

Today MRI is the preferred modality for imaging soft tissue particularly trauma and pathologies of the central nervous system and joints. The specific features of Vet-MR make available this imaging modality for the veterinary field.

> In house MRI

The advantage of Vet-MR is the convenience of having a fully customized system in your practice.

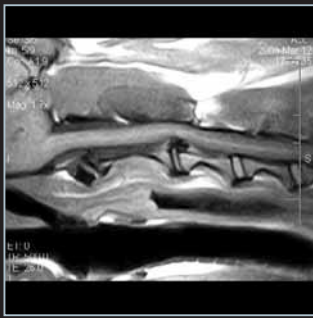
With Vet-MR there is no need to rely on outside MR providers, allowing you to improve your workflow while providing your customers with excellent diagnostic capabilities and follow up that suite the animal's needs.

Vet-MR can be easily installed in a small room, thanks to a specially designed shielding cage that makes Vet-MR an in office MRI.

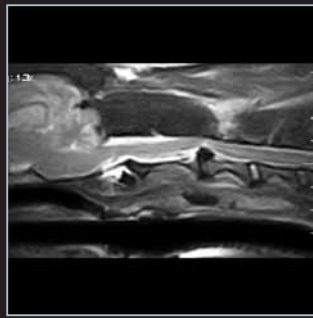
> Superb soft tissue visualization

MRI is recognized to be the method of choice for soft tissue imaging.

Vet-MR include a complete set of receiving coils providing high image quality for the different anatomic areas. Our dedicated coils are tailored to specific anatomy for the best image quality.



a)



b)



c)

Dog, cross-breed, 6 y old. Clinical signs: Neck pain.

- a) HRSE T1 weighted sagittal image (TR 500 TE 26 Slice thickness 3.5 mm)
 - b) SE T2 weighted sagittal image (TR 3000 TE 90 Slice thickness 3.5 mm)
 - c) HRSE T1 weighted transverse image (TR 600 TE 26 Slice thickness 4 mm)
- Cervical (C2-C3) disk extrusion with ventral and left side spinal cord compression



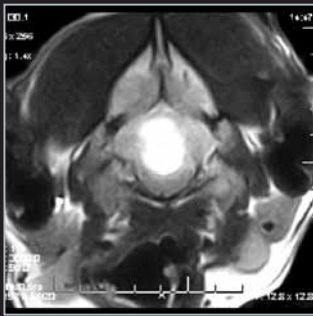
a)



b)

Doberman, female, 5 y old. Clinical signs: neck pain, ataxia on four limbs.

- a) and b): HRSE T1 weighted (TR 640 TE 26, slice thickness 4 mm)
- C5-C6 disk extrusion with spinal cord and right nerve root compression



a)



b)



c)

German Shepherd, female, 7 y old. Clinical signs: Ipermetria, tetraparesis

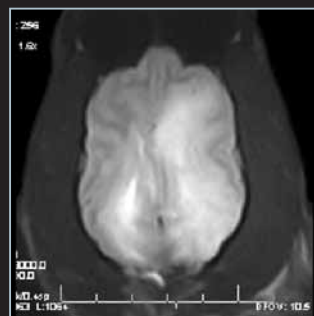
- a) SE T2 weighted transverse image (TR 3000 TE 90, slice thickness 5 mm)
 - b) SE T1 weighted transverse image (TR 640 TE 18, slice thickness 5 mm)
 - c) SE T1 weighted sagittal image (TR 600 TE 18, slice thickness 4.5 mm)
- Posterior fossa meningioma

Epagneul Breton, male, 5 y old. Clinical signs: altered mental status, tetraparesis, multiple cranial nerve deficits

- a) SE T2 weighted transverse image (TR 3000 TE 90, slice thickness 4 mm)
 - b) SE T2 weighted dorsal image (TR 3000 TE 90 Slice thickness 4 mm)
 - c) SE T1 weighted transverse image (TR 600 TE 18, slice thickness 4 mm) after contrast administration
- Bacterial meningoencephalitis



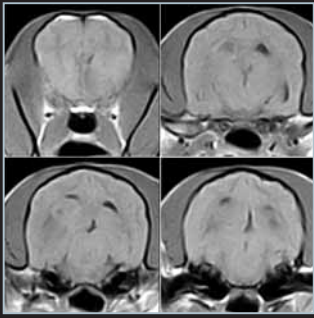
a)



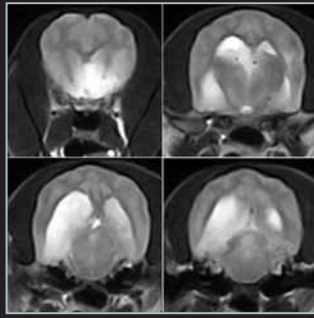
b)



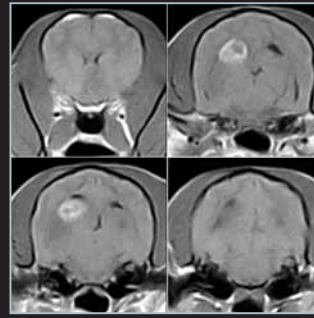
c)



Transverse T1W

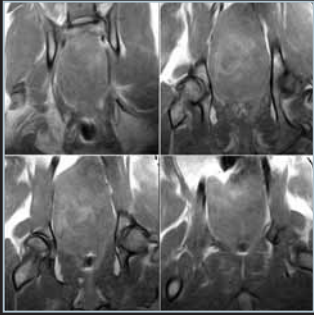


Transverse T2W

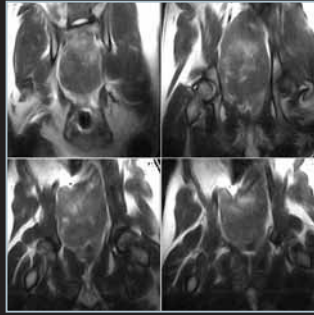


Transverse T1W+C

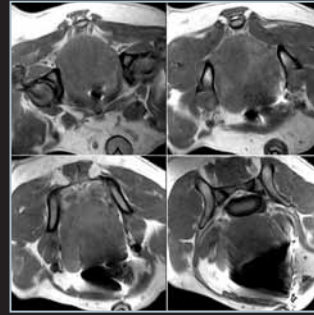
Patient: 8-year-old, castrated, miniature pinscher with seizures for 6 months. The seizures were responsive to phenobarbital therapy but recently have gotten worse. MRI Conclusion: Based on the MRI signs, the prioritized differential diagnosis for the caudal lesion includes a neoplasm arising from the brain parenchyma, ependyma or choroid plexus with or without adjacent edema and less likely an inflammatory lesion (granuloma or infection). The prioritized differential diagnosis for the rostral lesion includes cerebral edema or a low-grade glioma.



Dorsal T1W



Dorsal T2W



Transverse T1

Patient: 9-year-old, castrated, Brittany Spaniel with tenesmus for 2 weeks. MRI Conclusion: The clinical signs are attributed to the mass. The mass appears to be surgically accessible using an abdominal approach. The primary differential diagnosis for the mass is a neoplasm (e.g., leiomyoma) of the colon wall.

Boxer, male, 6 y old. Clinical signs: Painful and swollen left knee

- a) SE 3DT1 sagittal image (TR 300 TE 24 slice thickness 1.3 mm) after contrast administration
- b) Turbo SE T2 weighted sagittal image (TR 2800 TE 80 slice thickness 4 mm)
- c) Turbo SE T2 weighted transverse image (TR 2800 TE 80 slice thickness 4 mm)
- d) GE STIR dorsal image (TR 1300 TE 25 TI 75 slice thickness 4 mm) Synovial cell neoplasia

German Shepherd, male, 6 y old. Clinical signs: Lumbosacral pain

- a) SE T1 weighted sagittal image (TR 640 TE 26, Slice thickness 4.0 mm) Disk protrusion L6/L7 (mild) and L7-S1
- b) SE T1 weighted transverse image (TR 640 TE 26, Slice thickness 4.0 mm) L7-S1 disk protrusion, loss of normal cauda equine morphology, loss of epidural fat



a)



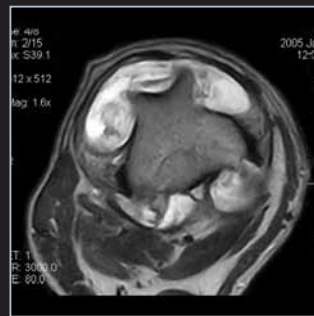
b)



a)



b)



c)



d)



Through our worldwide network of clinics
we guarantee quality applications
for every customer

Vet-MR: the reasons for success



> Smart investment

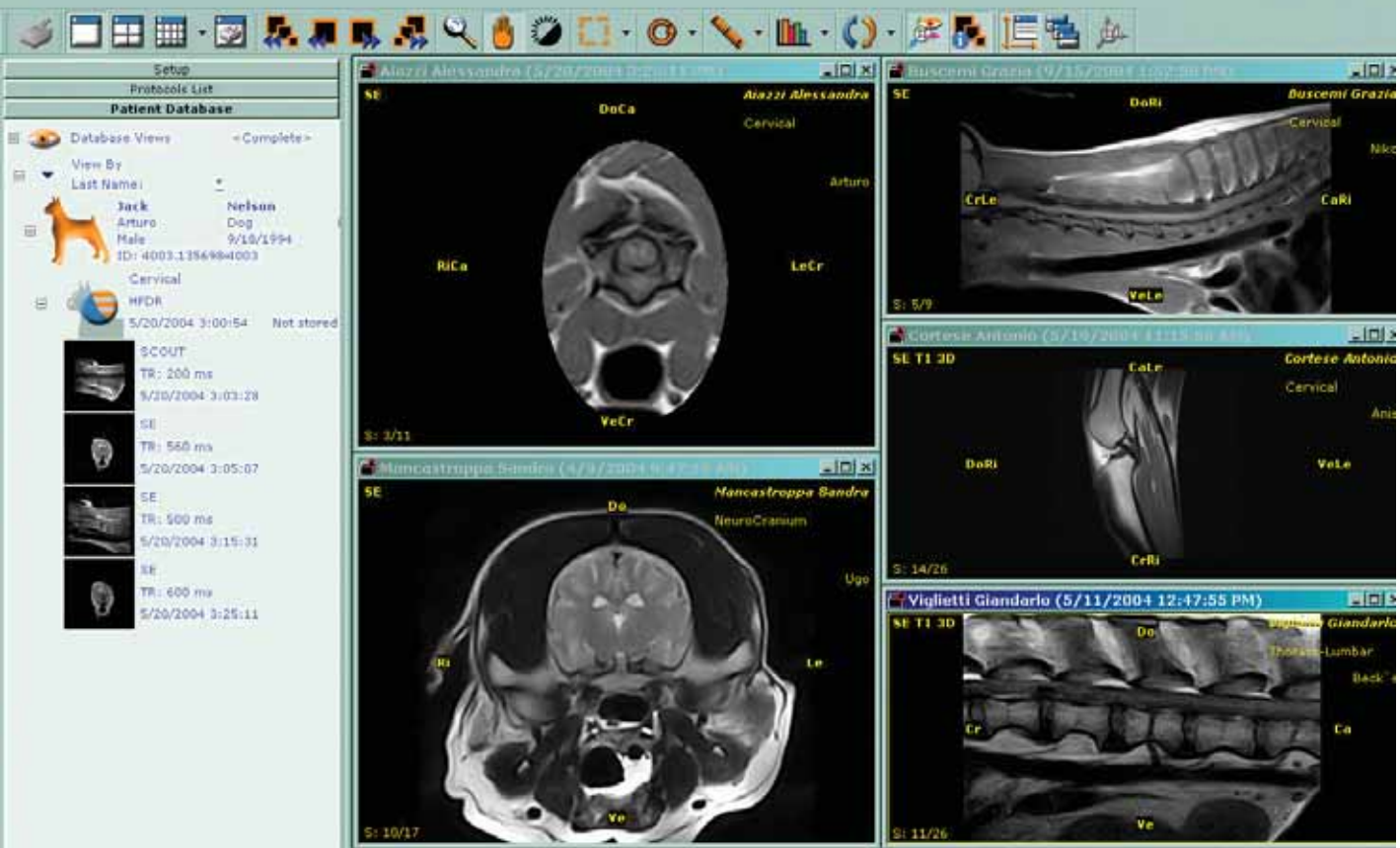
Vet-MR has a maintenance free permanent magnet, no special cooling systems are required and power consumption is only 1kw enabling to be run from a standard power outlet.

The total operating costs of Vet-MR are very low thanks to its easy siting, minimal running costs and the limited initial investment.

> Shaped to meet Veterinary needs

Thanks to the open design, the animal's handling is extremely easy, and the operator gets familiar with the use after a short training on site.

The Windows operator interface allows also an intuitive approach for the operator and it features appropriate vet terms.



Easy MRI

> Dedicated software

Vet-MR speaks the veterinary language. The system has been developed in close collaboration with veterinary doctors, in fact it features correct vet terminology and image orientation, that together with an appropriate patient set up scheme yield an easy exam management flow.



> Full connectivity

Vet-MR is fully DICOM and offers smart solutions for connectivity and teleradiology, featuring the standard Dicom classes.



> Service on line

The remote service program Aras Win, specially developed for the Esaote MRI systems, enables service technicians to directly connect to any Esaote MRI unit for immediate check-up and troubleshooting.

> Real Time positioning

Pet positioning is extremely fast by using the real time feature that continuously visualizes the anatomy location (MRI fluoroscopy); afterwards a localizer (scout) scan is performed contemporarily in the three orthogonal directions.



> Pet monitoring

With Vet-MR ease of monitoring and accessibility to the patient reduces risk during the exam; furthermore, the specific design of Vet MR allows for use of existing anesthesia equipment.

> Examination

Vet-MR provides a wide range of preprogrammed protocols that are optimized for Vet purpose and tested at research sites, but it offers also the possibility to create customized protocols, according to specific clinical needs.

> Vet-MR Site Requirements

Minimum space requirements:	18 m ² footprint - 13x13 feet - 2.4 m ceiling height
Total unit weight:	2250 kg (shielding cage excluded)
Shielding cage weight:	500 kg
Temperature:	20 to 26 °C
Temperature variation:	± 3 °C / hour max
Power supply requirements:	max power 1.0 kW - standby 0.2 kW Voltage: 100 V, 110 V, 200 V, 220 V, 230 V, 240 V Frequency: 50/60 Hz

> Magnetic Unit

Magnet Type:	open, permanent
Magnetic field:	0.2 T, vertical
Open design with patient access from	three sides
Main access with ergonomic profile:	Inner opening 24 cm - Outer opening 30 cm
Stray field:	0,5 mT line max 150 cm from magnet isocentre

> Gradient System

Gradient Strength:	± 20 mT/m
Rise Time:	0.8 msec (0 to 99 %)
Slew Rate:	25 mT/m/ms

> Patient Table

Patient table can rotate and slide into the magnet	
Maximum patient weight:	200 kg

> Console

Main PC and control unit - Electronics and signal processors - Keyboard and mouse
High resolution - high contrast color monitor - 19" - real flat

> Processing System

PC based computer with separate Digital Signal Processors for data elaboration	
Operating System:	Windows® 2000 Professional
Storage capacity:	over 130.000 images

> Storing System

External SCSI CD-writer - CD 700 MB	
Magneto-optical disc drive - MOD up to 1.3 GB	

> RF System and Coils

Solid state RF amplifier
Automatic receiving coil recognition
Pre-amplifier integrated in all receiving coils
Full set of receiving coils tailored to all relevant anatomical areas

> User Interface and software

Windows® modality interface
Pre-defined sequences and protocols
User's customized protocols

> Acquisition Sequences

Scout view:	3 orthogonal planes
Spin Echo - Turbo Spin Echo - Multi Echo (double echo) - Turbo Multi Echo	
Spin Echo Half Echo - Spin Echo Half Scan - Gradient Echo	
FLAIR (Fluid Attenuation Inversion Recovery)	
Spin Echo - Turbo Spin Echo	
Inversion Recovery	
Fat Suppression :	Short TI Inversion Recovery (STIR) Short TI Inversion Recovery Gradient Echo (GE-STIR)

3D Gradient Echo	
Gradient Echo 3D Contrast Enhanced (3D CE)	
SE 3D T1	

> Imaging Capabilities

Real Time positioning tool	
2D and 3D acquisition	
Scan Planes:	sagittal, transversal, coronal, oblique and double oblique
FOV:	in acquisition: from 100 to 300 mm visualised FOV: 140 mm
Minimum slice thickness 2D:	2.0 mm
3D:	0.6 mm
Maximum slice number:	96
Matrix:	up to 512 x 512

> Image Processing

Mouse controlled Window (level - width)	
Zoom - Pan - Clip	
Rotation and Mirror functions	
Multi Planar Reconstruction (MPR) from 3D volumes	
Measurements:	area - distance - angle
Statistic Functions	

> Networking

Full DICOM® capability:	
• sending/receiving images (Storage SCU/SCP) - "autosend" functionality included	
• exporting images on removable media in dicomdir modality (Media Exchange)	
• DICOM® printing (Print Management SCU)	
• Worklist modality (Modality Worklist Management SCU)	
Easy connection to PACS and workstations	
Easy PC connection with Esa-View	

> Printing

Analog Printing	- electrical connection - optical connection (optional)
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Digital Printing - DICOM® Printing

> Technical Support

Remote service for prompt technical assistance
Automatic self check



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